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**Thin Solid Films**

Volume 216, Issue 1 , 28 August 1992, Pages 123-125

doi:10.1016/0040-6090(92)90880-K  Cite or Link Using DOI  
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## The characteristics of cyclic phosphazene and its applications for hard coatings

A. Yaguchi, S.Mori, M. Kitayama, T. Onda, A. Kurahashi and H. Ando

Planning and Development Department, Idemitsu Petrochemical Co. Ltd., 1-1 Marunouchi 3-Chome, Chiyoda-ku, Tokyo 100, Japan

Available online 18 September 2002.


### Abstract

A new type of curable material has been developed through the synthesis of hexachlorocyclotriphosphazene and 2-hydroxyethylmethacrylate. This is a colourless transparent viscous liquid, which is cured by irradiation with UV light, electron beams and heat. This cured material has extreme hardness as well as heat, chemical and stain resistance.

**Thin Solid Films**

Volume 216, Issue 1 , 28 August 1992, Pages 123-125

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## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	11	\$phosphorine\$.clm.	US-PGPUB	OR	OFF	2006/09/04 13:55

Interference  
Search  
10/536,510

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## EAST Search History

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L1	2741	430/283.1,302.CCLS.	US-PGPUB; USPAT	OR	OFF	2006/09/04 15:28
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L3	16	430/283.1,302.CCLS. AND \$PHOSPHAZ\$	US-PGPUB; USPAT	OR	OFF	2006/09/04 15:28
L4	33	430/283.1,302.CCLS. AND \$BIURET\$	US-PGPUB; USPAT	OR	OFF	2006/09/04 15:29
L5	2667	430/284.1,302.CCLS.	US-PGPUB; USPAT	OR	OFF	2006/09/04 15:28
L6	0	430/284.1,302.CCLS. AND \$PHOSPAZ\$	US-PGPUB; USPAT	OR	OFF	2006/09/04 15:28
L7	16	430/284.1,302.CCLS. AND \$PHOSPHAZ\$	US-PGPUB; USPAT	OR	OFF	2006/09/04 15:29
L8	2	7 NOT 3	US-PGPUB; USPAT	OR	OFF	2006/09/04 15:29
L9	59	430/284.1,302.CCLS. AND \$BIURET\$	US-PGPUB; USPAT	OR	OFF	2006/09/04 15:29
L10	31	9 NOT 4	US-PGPUB; USPAT	OR	OFF	2006/09/04 15:30
S1	34	triazatriphosphorine	US-PGPUB; USPAT	OR	OFF	2006/09/04 08:17
S2	40	\$triazatriphosphorine\$	US-PGPUB; USPAT	OR	OFF	2006/09/04 15:21
S3	58	\$triazatriphosphorine\$	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/09/04 08:18
S4	10200	\$PHOSPHAZEN\$	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/09/04 08:20
S5	3070	\$PHOSPHAZEN\$ AND (photoa\$ photob\$ photoc\$ photod\$ photoe\$ photof\$ photog\$ photoh\$ photoi\$ photoj\$ photok\$ photol\$ photom\$ photon\$ photoo\$ photop\$ photoq\$ photor\$ photos\$ photot\$ photou\$ photov\$ photow\$ photoX\$ photoY\$ photoZ\$)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/09/04 08:21
S6	238	\$PHOSPHAZEN\$ AND (photoa\$ photob\$ photoc\$ photod\$ photoe\$ photof\$ photog\$ photoh\$ photoi\$ photoj\$ photok\$ photol\$ photom\$ photon\$ photoo\$ photop\$ photoq\$ photor\$ photos\$ photot\$ photou\$ photov\$ photow\$ photoX\$ photoY\$ photoZ\$) AND ("430"/\$ "522"/\$).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/09/04 08:22

## EAST Search History

S7	11	\$PHOSPHAZEN\$ AND (photoa\$ photob\$ photoc\$ photod\$ photoe\$ photof\$ photog\$ photoh\$ photoi\$ photoj\$ photok\$ photol\$ photom\$ photon\$ photoo\$ photop\$ photoq\$ photor\$ photos\$ photot\$ photou\$ photov\$ photow\$ photoX\$ photoY\$ photoZ\$) AND ("430"/\$ "522"/\$).CCLS. AND BIURET\$	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/09/04 10:30
S8	210	S6 NOT S7	US-PGPUB; USPAT	OR	OFF	2006/09/04 08:26
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S10	2	("20030171449").PN.	US-PGPUB; USPAT; DERWENT	OR	OFF	2006/09/04 09:10
S11	1	2002-549189.NRAN.	DERWENT	OR	OFF	2006/09/04 09:14
S12	0	EP-19860041-\$.DID.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/09/04 09:14
S13	1	DE-19860041-\$.DID.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/09/04 12:40
S14	1	2000-499800.NRAN.	DERWENT	OR	OFF	2006/09/04 09:15
S15	2	EP-952170-\$.DID.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/09/04 09:18
S16	1	1999-592904.NRAN.	DERWENT	OR	OFF	2006/09/04 09:18
S17	9	\$PHOSPHAZEN\$ AND (photoa\$ photob\$ photoc\$ photod\$ photoe\$ photof\$ photog\$ photoh\$ photoi\$ photoj\$ photok\$ photol\$ photom\$ photon\$ photoo\$ photop\$ photoq\$ photor\$ photos\$ photot\$ photou\$ photov\$ photow\$ photoX\$ photoY\$ photoZ\$) AND ("430"/\$ "522"/\$).CCLS. AND (allophan\$)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/09/04 11:19
S18	1	("5051295").PN.	US-PGPUB; USPAT	OR	OFF	2006/09/04 10:43
S19	1	("5082717").PN.	US-PGPUB; USPAT	OR	OFF	2006/09/04 10:47
S20	0	("ep-453237-\$.did.").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/09/04 10:47

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S24	1	("6045975").PN.	US-PGPUB; USPAT	OR	OFF	2006/09/04 11:02
S25	1	ep-1177478-\$.did.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/09/04 11:05
S26	0	S17 not S7	US-PGPUB; USPAT	OR	OFF	2006/09/04 11:19
S27	0	\$PHOSPHAZEN\$ AND (photoa\$ photob\$ photoc\$ photod\$ photoe\$ photof\$ photog\$ photoh\$ photoi\$ photoj\$ photok\$ photol\$ photom\$ photon\$ photoo\$ photop\$ photoq\$ photor\$ photos\$ photot\$ photou\$ photov\$ photow\$ photoX\$ photoY\$ photoZ\$) AND ("430"/\$ "522"/\$).CCLS. AND (\$carbamyolurea\$)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/09/04 11:20
S28	0	\$PHOSPHAZEN\$ AND (photoa\$ photob\$ photoc\$ photod\$ photoe\$ photof\$ photog\$ photoh\$ photoi\$ photoj\$ photok\$ photol\$ photom\$ photon\$ photoo\$ photop\$ photoq\$ photor\$ photos\$ photot\$ photou\$ photov\$ photow\$ photoX\$ photoY\$ photoZ\$) AND ("430"/\$ "522"/\$).CCLS. AND (\$imidiodicarbonic\$)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/09/04 11:20
S29	40	ua adj 306h	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/09/04 12:24
S30	1	wo-200068739-\$.DID.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/09/04 12:36

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S31	1	DE-2361041-\$.DID.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/09/04 12:40
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L13	1	DE-19860041-\$.DID.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/09/04 09:18
L14	1	2000-499800.NRAN.	DERWENT	OR	OFF	2006/09/04 09:15
L15	2	EP-952170-\$.DID.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/09/04 09:18
L16	1	1999-592904.NRAN.	DERWENT	OR	OFF	2006/09/04 09:18
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L23	2	ep-1104790-\$.did.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/09/04 11:02
L24	1	("6045975").PN.	US-PGPUB; USPAT	OR	OFF	2006/09/04 11:02



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NEWS 9 JUN 02 The first reclassification of IPC codes now complete in  
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NEWS 10 JUN 26 TULSA/TULSA2 reloaded and enhanced with new search and  
and display fields  
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NEWS 12 JUL 11 CHEMSAFE reloaded and enhanced  
NEWS 13 JUL 14 FSTA enhanced with Japanese patents  
NEWS 14 JUL 19 Coverage of Research Disclosure reinstated in DWPI  
NEWS 15 AUG 09 INSPEC enhanced with 1898-1968 archive  
NEWS 16 AUG 28 ADISCTI Reloaded and Enhanced  
NEWS 17 AUG 30 CA(SM)/CAPplus(SM) Austrian patent law changes  
  
NEWS EXPRESS JUNE 30 CURRENT WINDOWS VERSION IS V8.01b, CURRENT  
MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),  
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=> S PHOSPHAZENE  
L1 492 PHOSPHAZENE

=> S L1 AND ACRYL?  
121575 ACRYL?  
L2 31 L1 AND ACRYL?

=> S L2 AND ENE  
6304255 ENE  
L3 6 L2 AND ENE

=> D ALL 1-6

L3 ANSWER 1 OF 6 REGISTRY COPYRIGHT 2006 ACS on STN  
RN 727704-44-1 REGISTRY  
ED Entered STN: 17 Aug 2004  
CN 1,4-Benzenedicarboxylic acid, polymer with 1,2-ethanediol,  
2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(1-oxo-2-propenyl)oxy]ethoxy]-  
1,3,5,2,4,6-triazatriphosphorine, 1,6-hexanediol, 2-hydroxypropyl  
2-propenoate, 1,1'-methylenebis[isocyanatocyclohexane] and methyl  
2-methyl-2-propenoate (9CI) (CA INDEX NAME)

OTHER NAMES:

CN Ethylene glycol-1,1,3,3,5,5-hexakis(acryloylethylenedioxy)cyclotriphosphazene-1,6-hexanediol-2-hydroxypropyl acrylate-methylenebis(cyclohexyl isocyanate)-methyl methacrylate-terephthalic acid copolymer  
MF (C30 H42 N3 O18 P3 . C15 H22 N2 O2 . C8 H6 O4 . C6 H14 O2 . C6 H10 O3 . C5 H8 O2 . C2 H6 O2)x  
CI PMS  
PCT Polyacrylic, Polyamide, Polyamide formed, Polyester, Polyester formed, Polyphosphazene, Polyphosphazene formed  
SR CA  
LC STN Files: CA, CAPLUS  
DT.CA Caplus document type: Patent  
RL.P Roles from patents: PREP (Preparation); PRP (Properties); USES (Uses)

Ring System Data

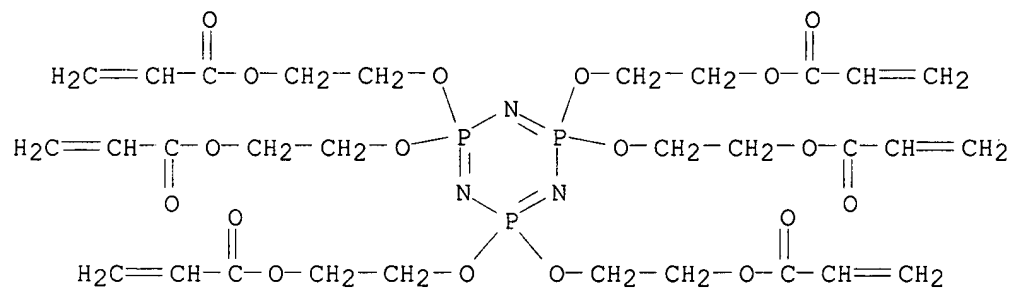
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EA	ES	SZ	RF	RID	Count
=====+=====+=====+=====+=====+=====					

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					6
C6	C6	6	C6	46.150.1	1 in CM
					2
N3P3	NPNPNP	6	N3P3	46.716.5	1 in CM
					1

CM 1

CRN 137741-82-3

CMF C30 H42 N3 O18 P3



CM 2

CRN 28605-81-4

CMF C15 H22 N2 O2

CCI IDS



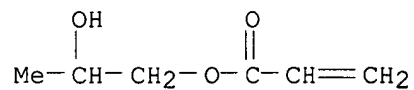
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D1-NCO

CM 3

CRN 999-61-1

CMF C6 H10 O3



CM 4

CRN 629-11-8

CMF C6 H14 O2

HO-(CH<sub>2</sub>)<sub>6</sub>-OH

CM 5

CRN 107-21-1

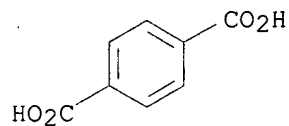
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HO-CH<sub>2</sub>-CH<sub>2</sub>-OH

CM 6

CRN 100-21-0

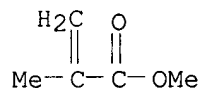
CMF C8 H6 O4



CM 7

CRN 80-62-6

CMF C5 H8 O2



1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

#### REFERENCE 1

AN 141:141213 CA

TI Three-dimensionally crosslinked resins and transparent molded products thereof

IN Kawasaki, Noboru; Kogo, Osamu; Enya, Masahiro

PA Mitsui Chemicals Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 20 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08F220-14

ICS C08F220-18; C08F220-28; C08F220-36; C08F230-02; C08F290-06

CC 37-3 (Plastics Manufacture and Processing)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004217700	A2	20040805	JP 2003-3682	20030109
PRAI	JP 2003-3682		20030109		

AB Compns. comprising Me methacrylate, R<sub>1</sub>(OCONHQNHCO<sub>2</sub>-Pol)<sub>n</sub>OCONHQNHCO<sub>2</sub>R<sub>2</sub> [R<sub>1</sub>, R<sub>2</sub> = hydroxy (meth)acrylate residue; Q = residue of aliphatic, aromatic, or

alicyclic diisocyanate; Pol = polyether diol or polyester diol residue; n = 1-5], and radical initiators are polymerized to give the resins with no runaway reaction. Thus, a mixture of 100 parts Me methacrylate and 40 parts of polyether-polyurethane acrylate (3:4:2 triethylene glycol-IPDI-2-hydroxyethyl acrylate condensate) was mixed with 0.2 part tert-Bu peroxy-2-ethylhexanoate and 0.1 part tert-Bu peroxy-3,5,5-trimethylhexanoate, poured in a space between glass sheets, and heated to 70-130° to give a transparent resin sheet showing Tg 115°, flexural modulus 3.2 GPa, H2O absorption 0.45%, no cracks at mold releasing, and good chemical resistance.

- ST polyether polyurethane acrylate methyl methacrylate polymer prepn  
IT Polyurethanes, preparation  
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(acrylic-polyether-; three-dimensionally crosslinked Me methacrylate-polyurethane (meth)acrylate resins for transparent molded products)
- IT Polyesters, preparation  
Polyethers, preparation  
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(acrylic-polyurethane-; three-dimensionally crosslinked Me methacrylate-polyurethane (meth)acrylate resins for transparent molded products)
- IT Transparent materials  
(three-dimensionally crosslinked Me methacrylate-polyurethane (meth)acrylate resins for transparent molded products)
- IT 2094-99-7, 3-Isopropenyl- $\alpha,\alpha$ -dimethylbenzyl isocyanate  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction with hydroxy-containing methacrylate)
- IT 727704-32-7P, 2-Hydroxyethyl acrylate-isophorone diisocyanate-methyl methacrylate-triethylene glycol copolymer 727704-34-9P, 1,1,3,3,5,5-Hexakis(acryloylethylenedioxy)cyclotriphosphazene-2-hydroxyethyl methacrylate-methyl methacrylate-2,4-TDI-tripropylene glycol copolymer 727704-36-1P, Ethylene oxide-glycidol methacrylate-N-(3-isopropenyl- $\alpha,\alpha$ -dimethylbenzyl)-1-methacryloyloxypropan-2-yl carbamate-methyl methacrylate-propylene oxide-2,4-TDI copolymer 727704-38-3P, Dimethyloltricyclodecane diacrylate-ethoxylated bisphenol A-hexamethylene diisocyanate-2-hydroxyethyl methacrylate-methyl methacrylate copolymer 727704-40-7P, Dibutylene glycol-dicyclopentanyl acrylate-2-hydroxyethyl acrylate-isophorone diisocyanate-N-(3-isopropenyl- $\alpha,\alpha$ -dimethylbenzyl)-2-methacryloyloxyethyl carbamate-methyl methacrylate-tris[N-(2-acryloyloxyethyl)] isocyanurate copolymer 727704-42-9P, Adipic acid-ethylene glycol-1,6-hexanediol-isophorone diisocyanate-methyl methacrylate-pentaerythritol triacrylate copolymer 727704-44-1P, Ethylene glycol-1,1,3,3,5,5-hexakis(acryloylethylenedioxy)cyclotriphosphazene-1,6-hexanediol-2-hydroxypropyl acrylate-methylenebis(cyclohexyl isocyanate)-methyl methacrylate-terephthalic acid copolymer 727704-47-4P, Adipic acid-1,4-butanediol-ethylene glycol-2-hydroxypropyl acrylate-N-(3-isopropenyl- $\alpha,\alpha$ -dimethylbenzyl)-1-methacryloyloxypropan-2-yl carbamate-methyl methacrylate-trimethylhexamethylene diisocyanate copolymer 727704-49-6P, Cyclohexyl methacrylate-ethylene glycol-1,6-hexanediol-2-hydroxyethyl methacrylate-isophthalic acid-methylenebis(cyclohexyl isocyanate)-methyl methacrylate copolymer 727704-51-0P, Adipic acid-ethylene glycol-1,6-hexanediol-2-hydroxyethyl acrylate-isobornyl methacrylate-isophorone diisocyanate-N-(3-isopropenyl- $\alpha,\alpha$ -dimethylbenzyl)-2-methacryloyloxyethyl carbamate-methyl methacrylate-tris[N-(2-acryloyloxyethyl)] isocyanurate copolymer  
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(three-dimensionally crosslinked Me methacrylate-polyurethane (meth)acrylate resins for transparent molded products)
- IT 126710-00-7P 126710-08-5P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT

(Reactant or reagent)

(three-dimensionally crosslinked Me methacrylate-polyurethane  
(meth)acrylate resins for transparent molded products)

L3 ANSWER 2 OF 6 REGISTRY COPYRIGHT 2006 ACS on STN

RN 727704-34-9 REGISTRY

ED Entered STN: 17 Aug 2004

CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with  
2,4-diisocyanato-1-methylbenzene, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-  
hexakis[2-[(1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine,  
[(1-methyl-1,2-ethanediyl)bis(oxy)]bis[propanol] and methyl  
2-methyl-2-propenoate (9CI) (CA INDEX NAME)

OTHER NAMES:

CN 1,1,3,3,5,5-Hexakis(acryloylethylenedioxy)cyclotriphosphazene-2-  
hydroxyethyl methacrylate-methyl methacrylate-2,4-TDI-tripropylene glycol  
copolymer

MF (C30 H42 N3 O18 P3 . C9 H20 O4 . C9 H6 N2 O2 . C6 H10 O3 . C5 H8 O2)x

CI PMS

PCT Polyacrylic, Polyether, Polyphosphazene, Polyphosphazene formed,  
Polyurethane, Polyurethane formed

SR CA

LC STN Files: CA, CAPLUS

DT.CA Caplus document type: Patent

RL.P Roles from patents: PREP (Preparation); PRP (Properties); USES (Uses)

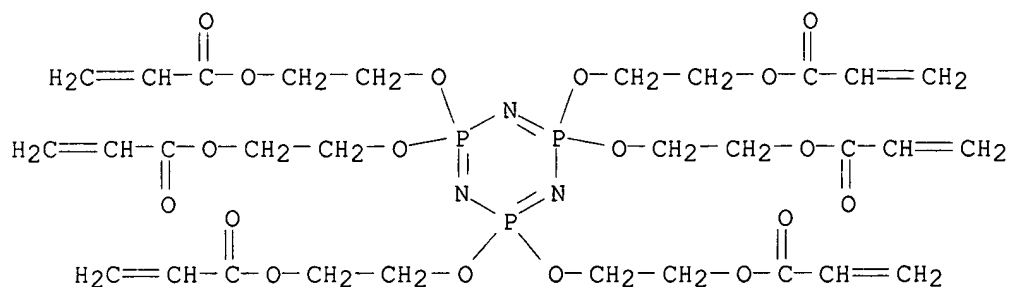
#### Ring System Data

Elemental Analysis	Elemental Sequence	Size of the Rings	Ring System Formula	Ring Identifier	RID Occurrence
EA	ES	SZ	RF	RID	Count
C6	C6	6	C6	46.150.18	1 in CM
					4
N3P3	NPNPNP	6	N3P3	46.716.5	1 in CM
					1

CM 1

CRN 137741-82-3

CMF C30 H42 N3 O18 P3

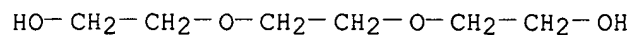


CM 2

CRN 24800-44-0

CMF C9 H20 O4

CCI IDS

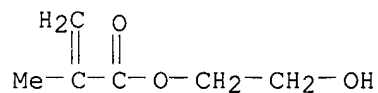


3 ( D1-Me )

CM 3

CRN 868-77-9

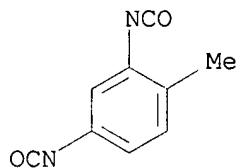
CMF C6 H10 O3



CM 4

CRN 584-84-9

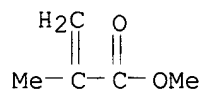
CMF C9 H6 N2 O2



CM 5

CRN 80-62-6

CMF C5 H8 O2



1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

#### REFERENCE 1

AN 141:141213 CA  
 TI Three-dimensionally crosslinked resins and transparent molded products thereof  
 IN Kawasaki, Noboru; Kogo, Osamu; Enya, Masahiro  
 PA Mitsui Chemicals Inc., Japan  
 SO Jpn. Kokai Tokkyo Koho, 20 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C08F220-14  
 ICS C08F220-18; C08F220-28; C08F220-36; C08F230-02; C08F290-06  
 CC 37-3 (Plastics Manufacture and Processing)  
 FAN.CNT 1



	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004217700	A2	20040805	JP 2003-3682	20030109
PRAI	JP 2003-3682		20030109		
AB	Compns. comprising Me methacrylate, R1(OCONHQNHCO2-Pol)nOCONHQNHCO2R2 [R1, R2 = hydroxy (meth)acrylate residue; Q = residue of aliphatic, aromatic, or alicyclic diisocyanate; Pol = polyether diol or polyester diol residue; n = 1-5], and radical initiators are polymerized to give the resins with no runaway reaction. Thus, a mixture of 100 parts Me methacrylate and 40 parts of polyether-polyurethane acrylate (3:4:2 triethylene glycol-IPDI-2-hydroxyethyl acrylate condensate) was mixed with 0.2 part tert-Bu peroxy-2-ethylhexanoate and 0.1 part tert-Bu peroxy-3,5,5-trimethylhexanoate, poured in a space between glass sheets, and heated to 70-130° to give a transparent resin sheet showing Tg 115°, flexural modulus 3.2 GPa, H2O absorption 0.45%, no cracks at mold releasing, and good chemical resistance.				
ST	polyether polyurethane acrylate methyl methacrylate polymer prepn				
IT	Polyurethanes, preparation RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (acrylic-polyether-; three-dimensionally crosslinked Me methacrylate-polyurethane (meth)acrylate resins for transparent molded products)				
IT	Polyesters, preparation Polyethers, preparation RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (acrylic-polyurethane-; three-dimensionally crosslinked Me methacrylate-polyurethane (meth)acrylate resins for transparent molded products)				
IT	Transparent materials (three-dimensionally crosslinked Me methacrylate-polyurethane (meth)acrylate resins for transparent molded products)				
IT	2094-99-7, 3-Isopropenyl- $\alpha,\alpha$ -dimethylbenzyl isocyanate RL: RCT (Reactant); RACT (Reactant or reagent) (reaction with hydroxy-containing methacrylate)				
IT	727704-32-7P, 2-Hydroxyethyl acrylate-isophorone diisocyanate-methyl methacrylate-triethylene glycol copolymer 727704-34-9P, 1,1,3,3,5,5-Hexakis(acryloylethylenedioxy)cyclotriphosphazene-2-hydroxyethyl methacrylate-methyl methacrylate-2,4-TDI-tripropylene glycol copolymer 727704-36-1P, Ethylene oxide-glycidol methacrylate-N-(3-isopropenyl- $\alpha,\alpha$ -dimethylbenzyl)-1-methacryloyloxypropan-2-yl carbamate-methyl methacrylate-propylene oxide-2,4-TDI copolymer 727704-38-3P, Dimethyloltricyclodecane diacrylate-ethoxylated bisphenol A-hexamethylene diisocyanate-2-hydroxyethyl methacrylate-methyl methacrylate copolymer 727704-40-7P, Dibutylene glycol-dicyclopentanyl acrylate-2-hydroxyethyl acrylate-isophorone diisocyanate-N-(3-isopropenyl- $\alpha,\alpha$ -dimethylbenzyl)-2-methacryloyloxyethyl carbamate-methyl methacrylate-tris[N-(2-acryloyloxyethyl)] isocyanurate copolymer 727704-42-9P, Adipic acid-ethylene glycol-1,6-hexanediol-isophorone diisocyanate-methyl methacrylate-pentaerythritol triacrylate copolymer 727704-44-1P, Ethylene glycol-1,1,3,3,5,5-hexakis(acryloylethylenedioxy)cyclotriphosphazene-1,6-hexanediol-2-hydroxypropyl acrylate-methylenebis(cyclohexyl isocyanate)-methyl methacrylate-terephthalic acid copolymer 727704-47-4P, Adipic acid-1,4-butanediol-ethylene glycol-2-hydroxypropyl acrylate-N-(3-isopropenyl- $\alpha,\alpha$ -dimethylbenzyl)-1-methacryloyloxypropan-2-yl carbamate-methyl methacrylate-trimethylhexamethylene diisocyanate copolymer 727704-49-6P, Cyclohexyl methacrylate-ethylene glycol-1,6-hexanediol-2-hydroxyethyl methacrylate-isophthalic acid-methylenebis(cyclohexyl isocyanate)-methyl methacrylate copolymer 727704-51-0P, Adipic acid-ethylene glycol-1,6-hexanediol-2-hydroxyethyl acrylate-isobornyl methacrylate-isophorone diisocyanate-N-(3-isopropenyl- $\alpha,\alpha$ -dimethylbenzyl)-2-methacryloyloxyethyl carbamate-methyl methacrylate-tris[N-(2-acryloyloxyethyl)] isocyanurate copolymer				

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(three-dimensionally crosslinked Me methacrylate-polyurethane (meth)acrylate resins for transparent molded products)

IT 126710-00-7P 126710-08-5P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(three-dimensionally crosslinked Me methacrylate-polyurethane (meth)acrylate resins for transparent molded products)

L3 ANSWER 3 OF 6 REGISTRY COPYRIGHT 2006 ACS on STN

RN 255384-20-4 REGISTRY

ED Entered STN: 09 Feb 2000

CN 2-Propenoic acid, 2-methyl-, 2-(hydroxymethyl)-2-[[ (2-methyl-1-oxo-2-propenyl)oxy)methyl]-1,3-propanediyl ester, polymer with 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine and (1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] di-2-propenoate (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-, polymer with 2-(hydroxymethyl)-2-[[ (2-methyl-1-oxo-2-propenyl)oxy)methyl]-1,3-propanediyl bis(2-methyl-2-propenoate) and (1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] di-2-propenoate (9CI)

CN 2-Propenoic acid, (1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] ester, polymer with 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine and 2-(hydroxymethyl)-2-[[ (2-methyl-1-oxo-2-propenyl)oxy)methyl]-1,3-propanediyl bis(2-methyl-2-propenoate) (9CI)

OTHER NAMES:

CN Hexa(2-methacryloyloxyethoxy)cyclotriphosphazene-pentaerythritol trimethacrylate-Ripoxy SP 1509 copolymer

MF (C36 H54 N3 O18 P3 . C27 H32 O8 . C17 H24 O7)x

CI PMS

PCT Polyacrylic, Polyether, Polyphosphazene, Polyphosphazene formed

SR CA

LC STN Files: CA, CAPLUS, USPATFULL

DT.CA Caplus document type: Patent

RL.P Roles from patents: PREP (Preparation); PRP (Properties); USES (Uses)

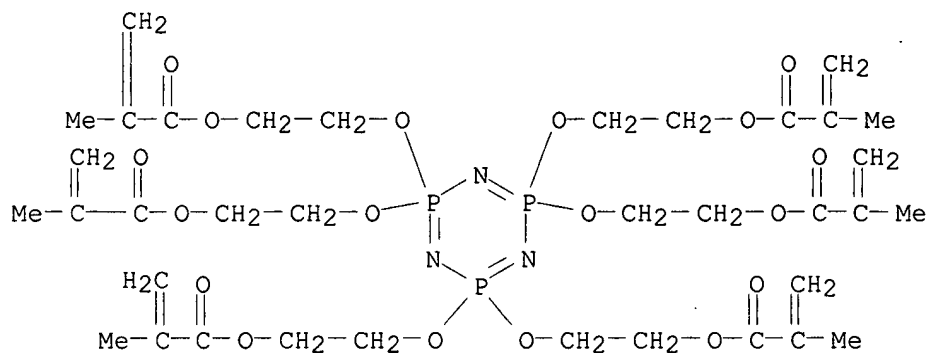
#### Ring System Data

Elemental Analysis	Elemental Sequence	Size of the Rings	Ring System Formula	Ring Identifier	RID Occurrence
EA	ES	SZ	RF	RID	Count
C6	C6	6	C6	46.150.18	2 in CM
					2
N3P3	NPNPNP	6	N3P3	46.716.5	1 in CM
					1

CM 1

CRN 92832-53-6

CMF C36 H54 N3 O18 P3

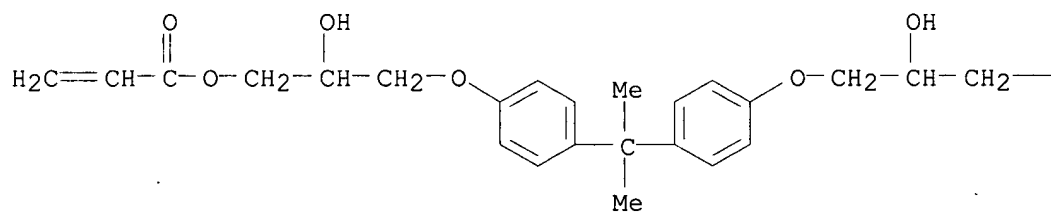


CM 2

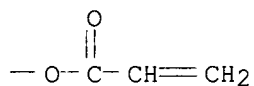
CRN 4687-94-9

CMF C27 H32 O8

PAGE 1-A



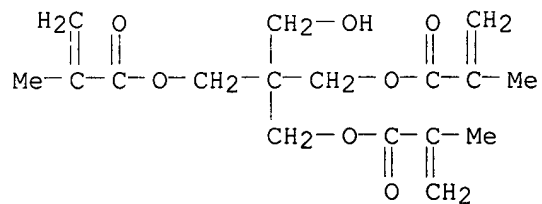
PAGE 1-B



CM 3

CRN 3524-66-1

CMF C17 H24 O7



2 REFERENCES IN FILE CA (1907 TO DATE)

2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1

AN 132:109482 CA

TI Weather-resistant compositions and coating materials and molded articles

IN Ogawa, Takashi; Mori, Koji; Akada, Mitsuo  
 PA Otsuka Chemical Co., Ltd., Japan  
 SO PCT Int. Appl., 58 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 IC ICM C09D004-02  
 ICS C08K005-3475; C08L033-04; C09D007-12; C07D249-20; C09K003-00  
 CC 42-10 (Coatings, Inks, and Related Products)  
 Section cross-reference(s): 55

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000002964	A1	20000120	WO 1999-JP3715	19990708
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	AU 9946504	A1	20000201	AU 1999-46504	19990708
	EP 1104790	A1	20010606	EP 1999-929769	19990708
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	US 6703139	B1	20040309	US 2001-720974	20010103
PRAI	JP 1998-196099		19980710		
	WO 1999-JP3715		19990708		
AB	The title compns. contain the reaction products of bisbenzotriazolylphenols with lactones, (meth)acrylates, and curing agents. Thus, a coating composition contained Aronix M 8030 40, tetrahydrofurfuryl acrylate 20, trimethylolpropane triacrylate 40, ε-caprolactone-2,2'-methylenebis[6-(2H-1,2,3-benzotriazole-2-yl)-4- (2-hydroxyethyl)phenol] copolymer 3, and Darocur 1173 3 parts.				
ST	weather resistant coating UV absorber; benzotriazolylhydroxyethylphenol lactone copolymer UV absorber; polyester benzotriazolylhydroxyethylphenol caprolactone UV absorber				
IT	Coating materials (abrasion-resistant; weather-resistant coating materials and moldings containing bisbenzotriazolylhydroxyethylphenol lactone copolymers)				
IT	Polymerization catalysts (photopolymn.; weather-resistant coating materials and moldings containing bisbenzotriazolylhydroxyethylphenol lactone copolymers)				
IT	Vinyl compounds, uses RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polymers; weather-resistant coating materials and moldings containing bisbenzotriazolylhydroxyethylphenol lactone copolymers)				
IT	Polymerization catalysts (radical; weather-resistant coating materials and moldings containing bisbenzotriazolylhydroxyethylphenol lactone copolymers)				
IT	Polymerization (ring-opening; weather-resistant coating materials and moldings containing bisbenzotriazolylhydroxyethylphenol lactone copolymers)				
IT	Crosslinking agents Lacquers UV stabilizers Yellowing (weather-resistant coating materials and moldings containing bisbenzotriazolylhydroxyethylphenol lactone copolymers)				
IT	Lactones RL: RCT (Reactant); RACT (Reactant or reagent) (weather-resistant coating materials and moldings containing				

IT bisbenzotriazolylhydroxyethylphenol lactone copolymers)  
 Coating materials  
 (weather-resistant; weather-resistant coating materials and moldings  
 containing bisbenzotriazolylhydroxyethylphenol lactone copolymers)  
 IT 7473-98-5, Darocur 1173  
 RL: CAT (Catalyst use); USES (Uses)  
 (Darocur 1173; weather-resistant coating materials and moldings containing  
 bisbenzotriazolylhydroxyethylphenol lactone copolymers)  
 IT 947-19-3, Irgacure 184  
 RL: CAT (Catalyst use); USES (Uses)  
 (Irgacure 184; weather-resistant coating materials and moldings containing  
 bisbenzotriazolylhydroxyethylphenol lactone copolymers)  
 IT 71868-10-5, Irgacure 907  
 RL: CAT (Catalyst use); USES (Uses)  
 (Irgacure 907; weather-resistant coating materials and moldings containing  
 bisbenzotriazolylhydroxyethylphenol lactone copolymers)  
 IT 78-67-1, AIBN 94-36-0, Benzoyl peroxide, uses  
 RL: CAT (Catalyst use); USES (Uses)  
 (weather-resistant coating materials and moldings containing  
 bisbenzotriazolylhydroxyethylphenol lactone copolymers)  
 IT 255384-16-8P 255384-17-9P 255384-18-0P 255384-20-4P 255384-21-5P  
 255827-82-8P,  $\epsilon$ -Caprolactone-2,2'-methylenebis[6-(2H-1,2,3-  
 benzotriazole-2-yl)-4-(2-hydroxyethyl)phenol] copolymer  
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP  
 (Preparation); USES (Uses)  
 (weather-resistant coating materials and moldings containing  
 bisbenzotriazolylhydroxyethylphenol lactone copolymers)  
 IT 38808-38-7P, Butyl acrylate-methacrylic acid-methyl methacrylate-vinyl  
 acetate copolymer 77492-22-9P, Acrylic acid-butyl acrylate-2-ethylhexyl  
 methacrylate-hydroxyethyl methacrylate-methyl methacrylate-styrene  
 copolymer 172156-26-2P, Acrylic acid-butyl acrylate-2-ethylhexyl  
 methacrylate-hydroxyethyl methacrylate-styrene copolymer 255820-10-1P,  
 Acrylic acid-butyl acrylate-2-ethylhexyl methacrylate-formaldehyde-  
 hydroxyethyl methacrylate-melamine-methyl methacrylate-styrene copolymer  
 255820-11-2P, Acrylic acid-butyl acrylate-2-ethylhexyl  
 methacrylate-formaldehyde-hydroxyethyl methacrylate-melamine-styrene  
 copolymer  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
 use); PREP (Preparation); USES (Uses)  
 (weather-resistant coating materials and moldings containing  
 bisbenzotriazolylhydroxyethylphenol lactone copolymers)  
 RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 (1) Daicel Chemical Industries Ltd; JP 10265557 A 1998 CAPLUS  
 (2) Nippon Paint Co Ltd; US 5760137 A CAPLUS  
 (3) Nippon Paint Co Ltd; EP 756614 A1 CAPLUS  
 (4) Nippon Paint Co Ltd; WO 9522250 A1  
 (5) Nippon Paint Co Ltd; JP 10503787 A 1998  
 (6) Otsuka Chemical Co Ltd; US 5922882 A CAPLUS  
 (7) Otsuka Chemical Co Ltd; EP 855393 A1 CAPLUS  
 (8) Otsuka Chemical Co Ltd; WO 9735847 A1 CAPLUS  
 (9) Otsuka Chemical Co Ltd; JP 09316060 A 1997 CAPLUS

## REFERENCE 2

AN 132:109425 CA  
 TI Coating compositions with good resistance to metal ion-induced  
 discoloration and weather and UV absorbents for use in the compositions  
 IN Ogawa, Takashi; Akada, Mitsuo; Mori, Hiroshi  
 PA Ohtsuka Chemical Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 22 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C09D005-32  
 ICS C09D004-02; C09D007-12; C09D163-10; C09D167-07; C09D171-00;

C09D175-16

ICA C08F290-06; C09K003-00

CC 42-5 (Coatings, Inks, and Related Products)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000017204	A2	20000118	JP 1998-186543	19980701
	JP 2918543	B2	19990712		
PRAI	JP 1998-186543		19980701		
AB	The coating comps. contain (A) radically polymerizable monomers or/and curable resins, and bisbenzotriazolylphenol compds. Thus, mixing Magicron TC 16U Clear (aminoacrylic clear coating) with 2 phr RUVA-100 {2,2'-methylenebis[6-(2H-1,2,3-benzotriazol-2-yl)-4-(2-hydroxyethyl)phenol]} gave a clear top coating composition for protecting prefinished metal sheet.				
ST	multilayer coating clear coating UV absorbent bisbenzotriazolylphenol; light stabilizer bisbenzotriazolylphenol clear coating; metal ion discoloration resistance coating				
IT	Epoxy resins, uses RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (acrylic; coating comps. with good resistance to metal ion-induced discoloration and weather and UV absorbents for use in comps.)				
IT	Aminoplasts RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (clear coating; coating comps. with good resistance to metal ion-induced discoloration and weather and UV absorbents for use in comps.)				
IT	UV stabilizers (coating comps. with good resistance to metal ion-induced discoloration and weather and UV absorbents for use in comps.)				
IT	Coating materials (transparent; coating comps. with good resistance to metal ion-induced discoloration and weather and UV absorbents for use in comps.)				
IT	Epoxy resins, uses RL: TEM (Technical or engineered material use); USES (Uses) (under coating; coating comps. with good resistance to metal ion-induced discoloration and weather and UV absorbents for use in comps.)				
IT	Coating materials (weather-resistant; coating comps. with good resistance to metal ion-induced discoloration and weather and UV absorbents for use in comps.)				
IT	9003-08-1P, Formaldehyde-melamine copolymer 38808-38-7P 51097-42-8P, Acrylic acid-butyl methacrylate-2-ethylhexyl acrylate-hydroxyethyl methacrylate-styrene copolymer 63747-55-7P, Acrylic acid-butyl methacrylate-2-ethylhexyl acrylate-hydroxyethyl methacrylate-methyl methacrylate-styrene copolymer 255384-16-8P, Aronix M-8030-tetrahydrofurfuryl acrylate-trimethylolpropane triacrylate copolymer 255384-17-9P, 2-(2-Ethoxyethoxy)ethyl acrylate-pentaerythritol triacrylate-Viscoat 3700 copolymer 255384-18-0P 255384-19-1P, Art Resin UN 3320HA-pentaerythritol triacrylate-pentaerythritol trimethacrylate-tetrahydrofurfuryl acrylate copolymer 255384-20-4P, Hexa(2-methacryloyloxyethoxy)cyclotriphosphazene-pentaerythritol trimethacrylate-Ripoxy SP 1509 copolymer 255384-21-5P RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (clear coating; coating comps. with good resistance to metal ion-induced discoloration and weather and UV absorbents for use in comps.)				
IT	196516-61-7, RUVA-100		196516-62-8	196516-63-9	196516-64-0

RL: MOA (Modifier or additive use); USES (Uses)  
(light stabilizer; coating compns. with good resistance to metal  
ion-induced discoloration and weather and UV absorbents for use in  
compns.)

IT 255390-94-4, Magicron TC 16U Clear 255390-95-5, Magicron TA 16  
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or  
engineered material use); USES (Uses)  
(top clear coating; coating compns. with good resistance to metal  
ion-induced discoloration and weather and UV absorbents for use in  
compns.)

L3 ANSWER 4 OF 6 REGISTRY COPYRIGHT 2006 ACS on STN

RN 212397-70-1 REGISTRY

ED Entered STN: 08 Oct 1998

CN Benzenecarboperoxoic acid, 4,4'-carbonylbis[[[2-[(2-methyl-1-oxo-2-  
propenyl)oxy]ethoxy]carbonyl]-, bis(1,1-dimethylethyl) ester, polymer with  
2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-  
propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine and  
 $\alpha$ -(1-oxo-2-propenyl)- $\omega$ -[(1-oxo-2-propenyl)oxy]poly(oxy-1,2-  
ethanediyl), graft (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-  
hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-, polymer with  
bis(1,1-dimethylethyl) 4,4'-carbonylbis[[[2-[(2-methyl-1-oxo-2-  
propenyl)oxy]ethoxy]carbonyl]benzenecarboperoxoate] and  
 $\alpha$ -(1-oxo-2-propenyl)- $\omega$ -[(1-oxo-2-propenyl)oxy]poly(oxy-1,2-  
ethanediyl), graft (9CI)

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -(1-oxo-2-propenyl)- $\omega$ -[(1-oxo-2-  
propenyl)oxy]-, polymer with bis(1,1-dimethylethyl) 4,4'-carbonylbis[[[2-  
[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]carbonyl]benzenecarboperoxoate] and  
2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-  
propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine, graft (9CI)

OTHER NAMES:

CN 3,3'-Bis(methacryloyloxyethoxycarbonyl)-4,4'-bis(tert-  
butylperoxycarbonyl)benzophenone-polyethylene glycol diacrylate-  
hexakis(methacryloyloxyethoxy)cyclotriphosphazene graft copolymer

MF (C37 H42 O15 . C36 H54 N3 O18 P3 . (C2 H4 O)n C6 H6 O3)x

CI PMS

PCT Polyacrylic, Polyether, Polyphosphazene, Polyphosphazene formed

SR CA

LC STN Files: CA, CAPLUS

DT.CA Cplus document type: Patent

RLD.P Roles for non-specific derivatives from patents: PREP (Preparation);  
USES (Uses)

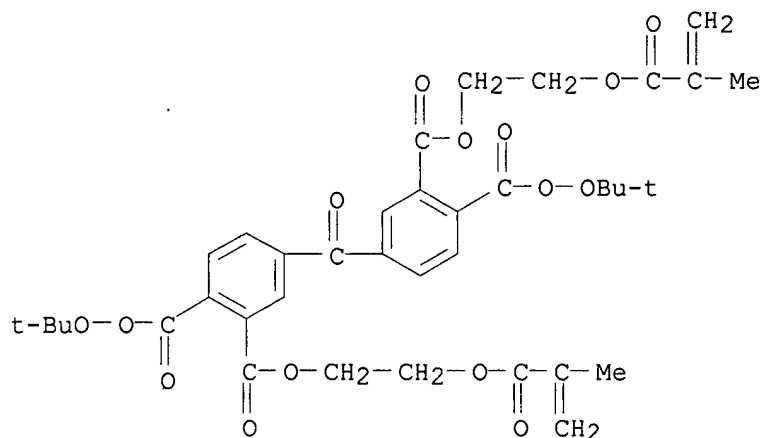
#### Ring System Data

Elemental Analysis	Elemental Sequence	Size of the Rings	Ring System Formula	Ring Identifier	RID Occurrence
EA	ES	SZ	RF	RID	Count
N3P3	NPNPNP	6	N3P3	46.716.5	1 in CM
					2
C6	C6	6	C6	46.150.18	2 in CM
					1

CM 1

CRN 204009-97-2

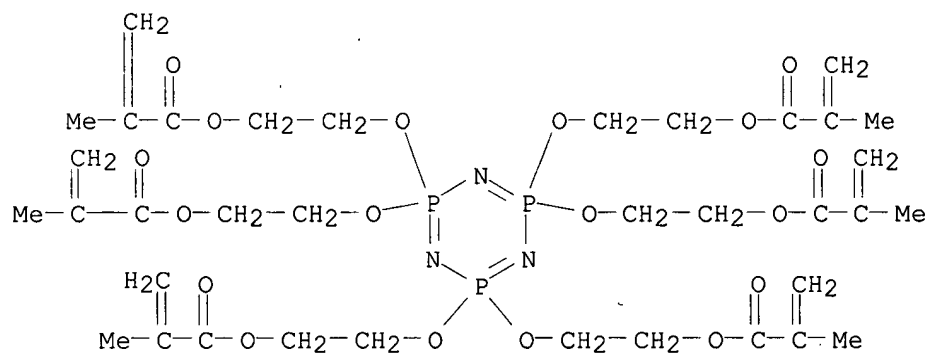
CMF C37 H42 O15



CM 2

CRN 92832-53-6

CMF C36 H54 N3 O18 P3

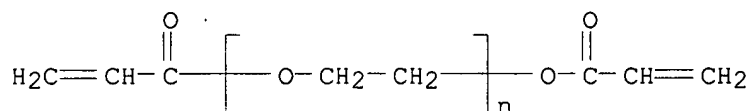


CM 3

CRN 26570-48-9

CMF (C2 H4 O)<sub>n</sub> C6 H6 O3

CCI PMS



1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

# REFERENCE 1

AN 129:224371 CA

TI Ionic conductor and its preparation

IN Okuo, Masaki; Hikuchi, Keiki; Omura, Hiroshi; Suyama, Shuji

PA Nippon Oil and Fats Co., Ltd., Japan



SO Jpn. Kokai Tokkyo Koho, 19 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM H01B001-12  
 ICS C08L051-00; C08F002-46  
 CC 76-2 (Electric Phenomena)  
 Section cross-reference(s): 35, 38, 72

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10208542	A2	19980807	JP 1997-8975	19970121
PRAI	JP 1997-8975		19970121		
AB	The conductor comprises (A) a support, (B) a polymer layer containing photopolymn. initiating group, and (C) a ion conducting layer formed from a composition containing (a) ion conducting monomer and (b) soluble electrolyte salt and/or electrolyte salt monomer, which is bonded with B via photopolymn. initiating group. B is formed on A, a composition containing ion conducting monomer and soluble electrolyte salt is contacted with B with irradiation of active energy to give the title ionic conductor. Ionic conductor layers having excellent peeling resistance and high strength are obtained.				
ST	ionic conductor peeling resistant; photopolymn ionic conductor coating				
IT	Polyoxyalkylenes, uses Polyoxyalkylenes, uses RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (acrylic-polyester-; graft copolymer ionic conductor layer and its preparation)				
IT	Polyesters, uses Polyesters, uses RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (acrylic-polyoxyalkylene-; graft copolymer ionic conductor layer and its preparation)				
IT	Polyoxyalkylenes, uses RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (acrylic; graft copolymer ionic conductor layer and its preparation)				
IT	Coating materials (elec. conductive; graft copolymer ionic conductor layer and its preparation)				
IT	Conducting polymers Ionic conductors (graft copolymer ionic conductor layer and its preparation)				
IT	Polymers, uses RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (graft; graft copolymer ionic conductor layer and its preparation)				
IT	Solid electrolytes (ionic graft copolymer conductor layer and its preparation)				
IT	Polyurethanes, uses RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polyoxyalkylene-, acrylic; graft copolymer ionic conductor layer and its preparation)				
IT	7791-03-9, Lithium perchlorate RL: MOA (Modifier or additive use); USES (Uses) (4; graft copolymer ionic conductor layer and its preparation)				
IT	13641-97-9DP, Acryloyl isocyanate, reaction products with acryloyl isocyanate, polymer with polyethylene oxides and (meth)acrylates, potassium complex RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (MAI; graft copolymer ionic conductor layer and its preparation)				

IT 56-81-5DP, 1,2,3-Propanetriol, reaction product with ethylene glycol and acrylic acid, polymer with polyethylene oxides and (meth)acrylates, uses 79-10-7DP, 2-Propenoic acid, reaction product with ethylene glycol and glycerin, polymer with polyethylene oxides and (meth)acrylates, uses 79-41-4DP, polymer with polyethylene oxides and (meth)acrylates 80-62-6DP, polymer with polyethylene oxides and (meth)acrylates 106-91-2DP, reaction products with partially saponified poly(vinyl acetate), polymer with polyethylene oxides and (meth)acrylates 107-21-1DP, 1,2-Ethanediol, reaction product with glycerin and acrylic acid, polymer with polyethylene oxides and (meth)acrylates, uses 2680-03-7DP, polymer with polyethylene oxides and (meth)acrylates, potassium complex 3524-68-3DP, Kayarad PET-30, polymer with polyethylene oxides and (meth)acrylates, potassium complex 6900-35-2DP, Potassium methacrylate, polymer with polyethylene oxides and (meth)acrylates, potassium complex 7439-93-2DP, Lithium, complexes with ion-conducting polymers, uses 7440-09-7DP, Potassium, complexes with ion-conducting polymers, uses 7440-50-8DP, Copper, complexes with ion-conducting polymers, uses 14798-03-9DP, Ammonium, complexes with ion-conducting polymers, uses 16325-47-6DP, Ammonium methacrylate, polymer with polyethylene oxides and (meth)acrylates 25805-17-8DP, Polyethyloxazoline, reaction products with acryloyl isocyanate, polymer with polyethylene oxides and (meth)acrylates, potassium complex 25852-47-5DP, polymer with polyethylene oxides and (meth)acrylates, potassium complex 26570-48-9DP, polymer with polyethylene oxides and (meth)acrylates 69488-61-5DP, Poly[(propionylimino)ethylene], reaction products with acryloyl isocyanate, polymer with polyethylene oxides and (meth)acrylates, potassium complex 101027-21-8DP, Gohseran L 302, reaction product with glycidyl methacrylate, polymer with polyethylene oxides and (meth)acrylates 120487-52-7DP, Eleminol RS 30, polymer with polyethylene oxides and (meth)acrylates 203309-79-9DP, 1-[4-[2-[2-(Methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one, polymer with polyethylene oxides and (meth)acrylates 212397-55-2DP, Butyl methacrylate-lauryl methacrylate-1-[4-[2-[2-(methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-methyl methacrylate-polyethylene glycol diacrylate graft copolymer, lithium complex 212397-63-2DP, polymer with polyethylene oxides and (meth)acrylates 212397-64-3P, Cerium methacrylate-1-[4-[2-[2-(methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-onemethyl methacrylate-polyethylene glycol diacrylate-potassium methacrylate-vinylpyrrolidone graft copolymer 212397-65-4P, 1-[4-[2-[2-(Methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-methyl methacrylate-polypropylene glycol dimethacrylate-Eleminol RS 30 graft copolymer 212397-66-5DP, 1-[4-[2-[2-(Methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-methyl methacrylate-vinylpyridine graft copolymer, lithium complex 212397-67-6DP, 1-[4-[2-[2-(Methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-methyl methacrylate-polyethylene glycol diacrylate-polyethylene glycol dimethacrylate graft copolymer, complex with lithium and potassium 212397-67-6DP, 1-[4-[2-[2-(Methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-methyl methacrylate-polyethylene glycol diacrylate-polyethylene glycol dimethacrylate graft copolymer, potassium complex 212397-68-7DP, 1-[4-[2-[2-(Methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-KBM 503-methyl methacrylate-polyethylene glycol diacrylate-polyethylene glycol dimethacrylate graft copolymer, potassium complex 212397-69-8DP, N,N-Dimethylacrylamide-1-[4-[2-[2-(methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-methyl methacrylate-pentaerythritol triacrylate-polyethylene glycol diacrylate-polyethylene glycol dimethacrylate graft copolymer, potassium complex 212397-70-1DP, 3,3'-Bis(methacryloyloxyethoxycarbonyl)-4,4'-bis(tert-butylperoxycarbonyl)benzophenone-polyethylene glycol diacrylate-Hexakis(methacryloyloxyethoxy)cyclotriphosphazene graft copolymer, lithium complex 212515-88-3DP, Glycidyl methacrylate-1-[4-[2-[2-(methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-

1-one-methyl methacrylate-polyethylene glycol diacrylate-propylene glycol monomethyl ether-triethylene tetramine graft copolymer, lithium complex 212520-79-1DP, ammonium complex 212520-81-5DP, Hexamethylene diisocyanate polyethylene glycol copolymer diacrylate-1-[4-[2-[2-(methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-methyl methacrylate-polyethylene glycol diacrylate graft copolymer, copper complex 212571-38-5DP, GE 3A, polymer with polyethylene oxides and (meth)acrylates 212571-90-9DP, Acrylonitrile-GE 3A-1-[4-[2-[2-(methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-methyl methacrylate-polyethylene glycol diacrylate-polyethylene glycol dimethacrylate graft copolymer, potassium complex 212572-38-8P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(graft copolymer ionic conductor layer and its preparation)

IT 1762-95-4 7447-39-4, Copper chloride (CuCl<sub>2</sub>), uses 7681-11-0, Potassium iodide (KI), uses 7778-74-7, Potassium perchlorate  
RL: MOA (Modifier or additive use); USES (Uses)

(graft copolymer ionic conductor layer and its preparation)

IT 212397-54-1P, 1-[4-[2-[2-(Methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-methyl methacrylate-polyethylene glycol diacrylate graft copolymer. 212397-55-2P, Butyl methacrylate-lauryl methacrylate-1-[4-[2-[2-(methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-methyl methacrylate-polyethylene glycol diacrylate graft copolymer 212397-56-3P, Butyl methacrylate-1-[4-[2-[2-(methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-methyl methacrylate-polyethylene glycol diacrylate graft copolymer 212397-57-4P, Dibutyl fumarate-methyl [2-[4-(2-hydroxy-2-methyl-1-oxopropyl)phenoxy]ethyl] fumarate-polyethylene glycol diacrylate graft copolymer 212397-58-5P, Bis[2-[4-(2-hydroxy-2-methyl-1-oxopropyl)phenoxy]ethyl] itaconate-dibutyl fumarate-polyethylene glycol diacrylate graft copolymer 212397-59-6P, Lauryl methacrylate-1-[4-(2-methacryloyloxy)phenyl]-2,2-dimethoxy-2-phenyl ethan-1-one-methyl methacrylate-polyethylene glycol diacrylate graft copolymer 212397-60-9P, 1,2-Diphenyl-1,2-ethanedione-2-O-acryloyloxime-1-[4-[2-[2-(methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-methyl methacrylate-polyethylene glycol diacrylate graft copolymer 212397-61-0P, Hydroxyethyl methacrylate-methacrylic acid-1-[4-[2-[2-(methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-methyl methacrylate-polyethylene glycol diacrylate graft copolymer 212397-62-1P, Bu methacrylate-N,N-dimethylaminoethyl methacrylate-1-[4-[2-[2-(methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-Me methacrylate-polyethylene glycol diacrylate-ST graft copolymer

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(ionic graft copolymer conductor layer and its preparation)

L3 ANSWER 5 OF 6 REGISTRY COPYRIGHT 2006 ACS on STN

RN 155880-83-4 REGISTRY

ED Entered STN: 22 Jun 1994

CN 11,15-Dioxa-2,9-diazaoctadec-17-enoic acid, 10,16-dioxo-13,13-bis[[[(1-oxo-2-propenyl)oxy]methyl]-, 3-[(1-oxo-2-propenyl)oxy]-2,2-bis[[[(1-oxo-2-propenyl)oxy]methyl]propyl ester, polymer with 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine and Sartomer C 9505 (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-, polymer with 3-[(1-oxo-2-propenyl)oxy]-2,2-bis[[[(1-oxo-2-propenyl)oxy]methyl]propyl 10,16-dioxo-13,13-bis[[[(1-oxo-2-propenyl)oxy]methyl]-11,15-dioxa-2,9-diazaoctadec-17-enoate and Sartomer C 9505 (9CI)

CN Sartomer C 9505, polymer with 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine and 3-[(1-oxo-2-propenyl)oxy]-2,2-bis[[[(1-oxo-2-propenyl)oxy]methyl]propyl 10,16-dioxo-13,13-bis[[[(1-oxo-2-propenyl)oxy]methyl]-11,15-dioxa-2,9-

diazaoctadec-17-enoate (9CI)

OTHER NAMES:

CN 1,1,3,3,5,5-hexa(methacryloylethylenedioxy)cyclotriphosphazene-  
Sartomer 9505-UA 306H copolymer  
MF (C36 H54 N3 O18 P3 . C36 H48 N2 O16 . Unspecified)x  
CI PMS  
PCT Manual component, Polyacrylic, Polyether, Polyphosphazene, Polyphosphazene  
formed  
SR CA  
LC STN Files: CA, CAPLUS  
DT.CA CAplus document type: Patent  
RL.P Roles from patents: PREP (Preparation)

Ring System Data

Elemental Analysis	Elemental Sequence	Size of the Rings	Ring System Formula	Ring Identifier	RID Occurrence
EA	ES	SZ	RF	RID	Count
N3P3	NPNPNP	6	N3P3	46.716.5	1 in CM 2

CM 1

CRN 126904-04-9

CMF Unspecified

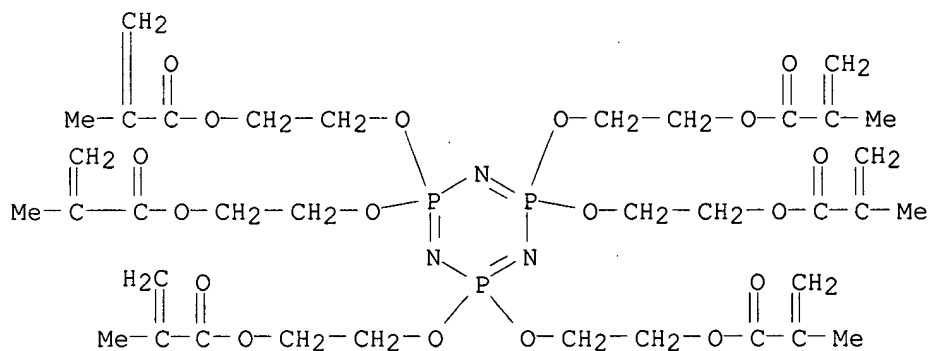
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 92832-53-6

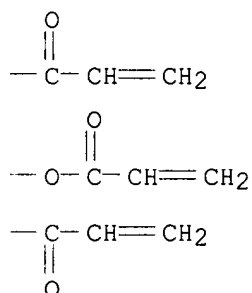
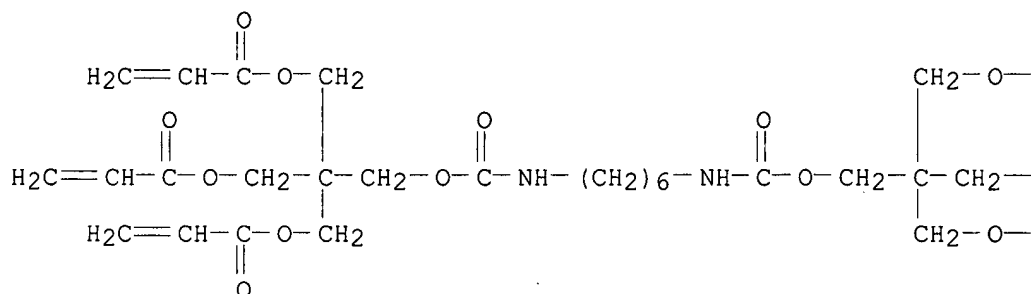
CMF C36 H54 N3 O18 P3



CM 3

CRN 77001-81-1

CMF C36 H48 N2 O16



1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

## REFERENCE 1

AN 121:85900 CA  
 TI Phosphazene-type polymer-coated parts with weatherability and abrasion resistance  
 IN Mori, Shigeo; Ando, Hiroyuki  
 PA Idemitsu Petrochemical Co, Japan  
 SO Jpn. Kokai Tokkyo Koho, 22 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C08J007-04  
 ICS B32B027-00; C08L085-02  
 ICA C08F299-02  
 ICI C08L085-02  
 CC 42-10 (Coatings, Inks, and Related Products)  
 Section cross-reference(s): 38  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06001869	A2	19940111	JP 1992-162381	19920622
PRAI	JP 1992-162381		19920622		

AB Title parts comprise substrates, interlayers comprising (1) curable resins having thermal expansion coefficient (E)  $\geq 5 \times 10^{-5}$  cm-cm-1-°C-1 at 40° or (2) thermoplastic resins having modulus of tensile elasticity  $\leq 2000$  MPa, and surface layers comprising curable polyphosphazenes. Thus, 55.0 g hexachlorocyclotriphosphazene was treated with 143 g 2-hydroxyethyl methacrylate in toluene in the presence of pyridine at 80° for 8 h to give 1,1,3,3,5,5-hexa(methacryloyloxyethoxy)cyclotriphosphazene, 40 parts of which was mixed with UA 306H 30, Sartomer 9505 (bifunctional urethane acrylate) 30, colloidal silica 100, Irgacure 184 (I) 1, Tinuvin

144 1, butanol 50, and Me iso-Bu ketone 80 parts, applied onto a transparent polycarbonate substrate with UV-cured precoat containing Sartomer 9640 (bifunctional urethane acrylate) 80, Kayarad PEG4000DA 12, Kayarad DPHA 3, I 3, a UV absorber 10, and solvents 200 parts showing E  $6.0 + 10^{-5}$  cm-cm-1-°C-1, treated at room temperature for 1 min, dried at 80° for 10 min, and UV-irradiated to give a 8- $\mu$ m surface layer showing retention of appearance, adhesion, and color after 2000-h exposure to weatherometer.

- ST polyphosphazene coating primer thermal expansion; polycarbonate substrate abrasion resistant coating; acrylic polyphosphazene coating; photocurable phosphazene polymer coating; tensile elasticity primer polyphosphazene coating; weatherability polyphosphazene coating; wear resistance polyphosphazene coating; primer acrylic resin polyphosphazene topcoating
- IT Coating materials  
(abrasion- and heat- and weather-resistant, acrylic polyphosphazenes, primers with controlled thermal expansion and tensile elasticity for)
- IT Urethane polymers, uses  
RL: USES (Uses)  
(acrylic, primers, for polyphosphazene top coatings, with weatherability and wear resistance)
- IT 155880-83-4P, 1,1,3,3,5,5-Hexa(methacryloylethylenedioxy)cyclotriphosphazene-Sartomer 9505-UA 306H copolymer  
RL: PREP (Preparation)  
(preparation of, coatings, with weatherability and wear resistance, primers for)
- IT 92832-53-6P  
RL: PREP (Preparation)  
(preparation of, for curable coatings, with wear resistance and weatherability)
- IT 9011-87-4P 155880-84-5P 156738-01-1P  
RL: PREP (Preparation)  
(preparation of, for interlayers for polyphosphazene top coatings, with weatherability and wear resistance)
- IT 868-77-9  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with cyclotriphosphazenes, for curable coatings)
- IT 940-71-6, Hexachlorocyclotriphosphazene  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with hydroxy-containing acrylates, for curable phosphazenes)

L3 ANSWER 6 OF 6 REGISTRY COPYRIGHT 2006 ACS on STN

RN 92832-54-7 REGISTRY

ED Entered STN: 17 Dec 1984

CN 2-Propenoic acid, 2-methyl-, 1,2-ethanediylbis(oxy-2,1-ethanediyl) ester, polymer with 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-, polymer with 1,2-ethanediylbis(oxy-2,1-ethanediyl) bis(2-methyl-2-propenoate) (9CI)

OTHER NAMES:

CN Hexakis(methacryloyloxyethoxy)cyclotriphosphazene-triethylene glycol dimethacrylate copolymer

MF (C36 H54 N3 O18 P3 . C14 H22 O6)x

CI PMS

PCT Polyacrylic, Polyphosphazene, Polyphosphazene formed

LC STN Files: CA, CAPLUS, USPATFULL

DT.CA CAplus document type: Journal; Patent

RL.P Roles from patents: PREP (Preparation)

RL.NP Roles from non-patents: BIOL (Biological study); PREP (Preparation); PRP (Properties); USES (Uses)

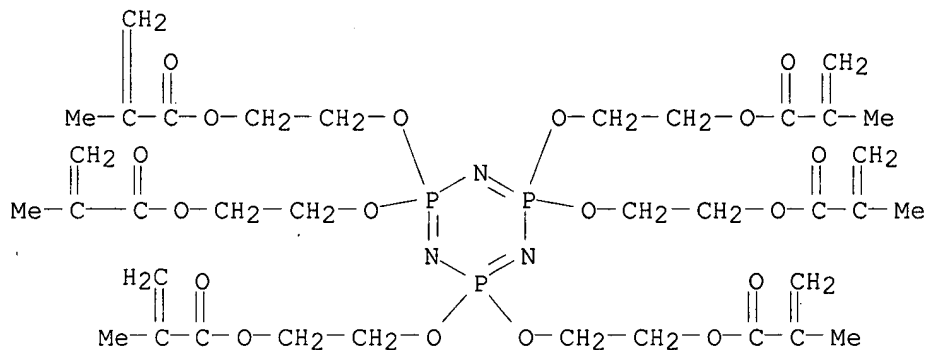
Ring System Data

Elemental Analysis	Elemental Sequence	Size of the Rings	Ring System Formula	Ring Identifier	RID Occurrence
EA	ES	SZ	RF	RID	Count
N3P3	NPNPNP	6	N3P3	46.716.5	1 in CM
					1

CM 1

CRN 92832-53-6

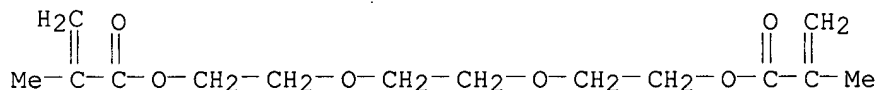
CMF C36 H54 N3 O18 P3



CM 2

CRN 109-16-0

CMF C14 H22 O6



4 REFERENCES IN FILE CA (1907 TO DATE)

4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

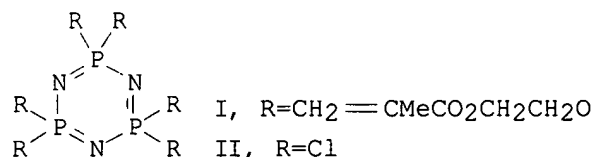
#### REFERENCE 1

AN 107:12858 CA  
 TI A study on crown and bridge resin using PNC-EMA monomer  
 AU Anzai, Misaki; Hoya, Ken; Toriyama, Fumito; Ide, Kozo; Kikuchi, Hisaji; Hirose, Hideharu; Yuda, Masashi; Ohashi, Masayoshi  
 CS Sch. Dent., Nihon Univ., Japan  
 SO Journal of Nihon University School of Dentistry (1986), 28(4), 240-8  
 CODEN: JNUDAT; ISSN: 0029-0432  
 DT Journal  
 LA English  
 CC 63-7 (Pharmaceuticals)  
 AB The properties of polymer resins for crowns and bridges using a new PNC-EMA monomer [P3N3(OCH2CH2O2CCCH3:CH2)6], mixed with monomers currently available on the market (14-70% weight) and poly(Me methacrylate) (PMMA) as the polymer base, were studied. Both the compressive strength and hardness increased with an increasing amts. of PNC-EMA monomer. Water sorption reached 1.86 mg/cm2 when the amount of PNC-EMA mixed was 28%. The degree of abrasion decreased in accordance with an increase in the amount of PNC-EMA showing a value one-third that of PMMA when mixed in a proportion of 70%.

ST PNC EMA dental bridge crown; methacryloxyethylenedioxy cyclotriphosphazene  
 dental polymer; cyclotriphosphazene methacryloxyethylenedioxy dental  
 IT Dental materials and appliances  
 (bridges, methacryloxyethylenedioxy cyclotriphosphazene-containing polymers  
 for, properties of)  
 IT Dental materials and appliances  
 (composites, methacryloxyethylenedioxy cyclotriphosphazene  
 monomer-containing, properties of, for bridges and crowns)  
 IT Dental materials and appliances  
 (crowns, methacryloxyethylenedioxy cyclotriphosphazene-containing polymers  
 for, properties of)  
 IT 80-62-6 109-16-0 3253-39-2, 2,2-Bis(4-methacryloxy)phenylpropane  
 RL: BIOL (Biological study)  
 (dental resin for crowns and bridges containing acrylic cyclotriphosphazene  
 and, properties of)  
 IT 92832-53-6  
 RL: BIOL (Biological study)  
 (dental resin for crowns and bridges containing, properties of)  
 IT 36936-74-0P 92832-54-7P 108704-94-5P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and properties of, for dental bridges and crowns)  
 IT 7732-18-5, properties  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (sorption of, by acrylic cyclotriphosphazene monomer-containing dental  
 polymers)

#### REFERENCE 2

AN 102:191109 CA  
 Correction of: 101:198144  
 TI Synthesis of hexakis(methacryloyloxyethoxy) cyclotriphosphazene and its  
 properties and the use as a composite resin  
 AU Anzai, Misaki; Ohashi, Masayoshi  
 CS Sch. Dent., Nihon Univ., Tokyo, 101, Japan  
 SO Shika Zairyo, Kikai (1984), 3(3), 401-8  
 CODEN: SZKIDA; ISSN: 0286-5858  
 DT Journal  
 LA Japanese  
 CC 63-7 (Pharmaceuticals)  
 Section cross-reference(s): 29  
 GI



AB The title compound (I) [92832-53-6] was prepared as new dental resin monomer.  
 Phosphonitride chloride (II) [1832-07-1] and 2-hydroxyethyl methacrylate  
 (HEMA) [868-77-9] were allowed to react at 40° to give I. A mixture  
 of approx. 21% (weight) of I, 8.5% triethyleneglycol dimethacrylate and 70%  
 Si<sub>3</sub>N<sub>4</sub> were polymerized, and the polymer had a compressive strength, tensile  
 strength and transverse strength of 473.6, 33.8 and 80.4 MPa, resp., and  
 hardness HK 96, coefficient of thermal expansion 24.2 X 10<sup>6</sup>/° and its  
 water sorption was 1.2 mg/cm<sup>2</sup> at 1 wk.  
 ST methacryloyloxyethoxy cyclotriphosphazene dental  
 IT Dental materials and fillings  
 (hexakis(methacryloyloxyethoxy) cyclotriphosphazene for)  
 IT 12033-89-5, biological studies  
 RL: BIOL (Biological study)



(dental composite resin containing acrylic cyclotriphosphazene-triethylene glycol dimethacrylate copolymer and)

IT 92832-54-7P  
 RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (preparation of, as dental material)

IT 92832-53-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, for dental resins)

IT 868-77-9  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with hexachlorotriphosphazene)

IT 1832-07-1  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with hydroxyethyl methacrylate)

# REFERENCE 3

AN 102:32326 CA  
 TI Dental sealants containing phosphazenes  
 PA Nihon University, Japan  
 SO Belg., 12 pp.  
 CODEN: BEXXAL  
 DT Patent  
 LA French  
 ICI A61  
 CC 63-7 (Pharmaceuticals)  
 Section cross-reference(s): 35

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	BE 899654	A1	19840831	BE 1984-212932	19840514
	JP 60038307	A2	19850227	JP 1983-147690	19830811
	JP 03050726	B4	19910802		
	US 4579880	A	19860401	US 1984-603648	19840424
	CA 1219403	A1	19870324	CA 1984-452920	19840426
	FR 2555440	A1	19850531	FR 1984-7420	19840514
	FR 2555440	B1	19880916		
	GB 2144754	A1	19850313	GB 1984-12441	19840516
	GB 2144754	B2	19861217		
	DE 3421060	A1	19850228	DE 1984-3421060	19840606
	DE 3421060	C2	19920820		
	NL 8401961	A	19850301	NL 1984-1961	19840620
PRAI	JP 1983-147690		19830811		

AB Dental sealant compns. contain 10-99% polymers prepared from phosphazenes containing acrylic groups and alkylene glycol dimethacrylates and silica fillers. Thus, 1,1,3,3,5,5-hexakis(methacryloyloxyethoxy)cyclotriphosphazene (I) [92832-53-6] was prepared by the reaction of hydroxyethyl methacrylate [868-77-9] with hexachlorocyclotriphosphazene [940-71-6] in anhydrous benzene followed by the addition of pyridine. This compound was polymerized in the presence of Bz2O2 for 6 h at 60° and for a further 2 h at 120°. The properties of the resulting polyphosphazene [93891-06-6] are tabulated. A polymer for dental sealants was prepared from 70 parts I, 30 parts triethylene glycol dimethacrylate and 0.3 parts Bz2O2 and the properties of the polymer determined. The properties of the phosphazene polymer such as resistance to compression stability, coefficient of thermal dilation, etc., were better than those of the polymers not containing phosphazene groups.

ST cyclotriphosphazene acrylic dental sealant

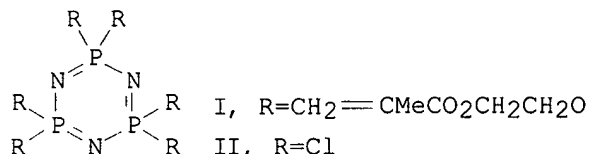
IT Phosphazene polymers  
 RL: BIOL (Biological study)  
 (cyclo-, methacrylic, dental sealants containing)

IT Dental materials and fillings  
 (sealants, methacryloylcyclotriphosphazenes)

IT 7631-86-9, biological studies  
 RL: BIOL (Biological study)  
 (dental sealant compns. containing methacryloylcyclotriphosphazenes and)  
 IT 92832-53-6P  
 RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and polymerization of, for dental sealant compns.)  
 IT 92832-54-7P 93891-06-6P  
 RL: PREP (Preparation)  
 (preparation of, for dental sealant compns.)  
 IT 868-77-9  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with hexachlorocyclotriphosphazene)  
 IT 940-71-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with hydroxyethyl methacrylate)

#### REFERENCE 4

AN 101:198144 CA  
 TI Synthesis of hexakis(methacryloyloxyethoxy)cyclotriphosphazene and its  
 properties and the use as a composite resin  
 AU Anzai, Misaki; Ohashi, Masayoshi  
 CS Sch. Dent., Nihon Univ., Tokyo, 101, Japan  
 SO Shika Zairyo, Kikai (1984), 59(5), 401-8  
 CODEN: SZKIDA; ISSN: 0286-5858  
 DT Journal  
 LA Japanese  
 CC 63-7 (Pharmaceuticals)  
 Section cross-reference(s): 29  
 GI



AB The title compound (I) [92832-53-6] was prepared as new dental resin monomer.  
 Phosphonitrile chloride (II) [1832-07-1] and 2-hydroxyethyl methacrylate  
 (HEMA) [868-77-9] were allowed to react at 40° to give I. A mixture  
 of approx. 21% (weight) of I, 8.5% triethyleneglycol dimethacrylate and 70%  
 Si<sub>3</sub>N<sub>4</sub> were polymerized, and the polymer had a compressive strength, tensile  
 strength and transverse strength of 473.6, 33.8 and 80.4 MPa, resp., and  
 hardness HK 96, coefficient of thermal expansion 24.2 + 106/° and  
 its water sorption was 1.2 mg/cm<sup>2</sup> at 1 wk.  
 ST methacryloyloxyethoxy cyclotriphosphazene dental  
 IT Dental materials and fillings  
 (hexakis(methacryloyloxyethoxy)cyclotriphosphazene for)  
 IT 12033-89-5, biological studies  
 RL: BIOL (Biological study)  
 (dental composite resin containing acrylic cyclotriphosphazene-triethylene  
 glycol dimethacrylate copolymer and)  
 IT 92832-54-7P  
 RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological  
 study); PREP (Preparation); USES (Uses)  
 (preparation of, as dental material)  
 IT 92832-53-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, for dental resins)  
 IT 868-77-9  
 RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, with hexachlorocyclotriphosphazene)  
IT 1832-07-1  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with hydroxyethyl methacrylate)

=> D HIS

(FILE 'HOME' ENTERED AT 08:07:37 ON 04 SEP 2006)

FILE 'REGISTRY' ENTERED AT 08:07:48 ON 04 SEP 2006

L1 492 S PHOSPHAZENE  
L2 31 S L1 AND ACRYL?  
L3 6 S L2 AND ENE

=> S L2 OR L3

L4 31 L2 OR L3

=> D 1-31

L4 ANSWER 1 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN  
RN 827320-65-0 REGISTRY  
ED Entered STN: 08 Feb 2005  
CN 2-Propenoic acid, (1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)]  
ester, polymer with 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-  
1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine (9CI) (CA  
INDEX NAME)

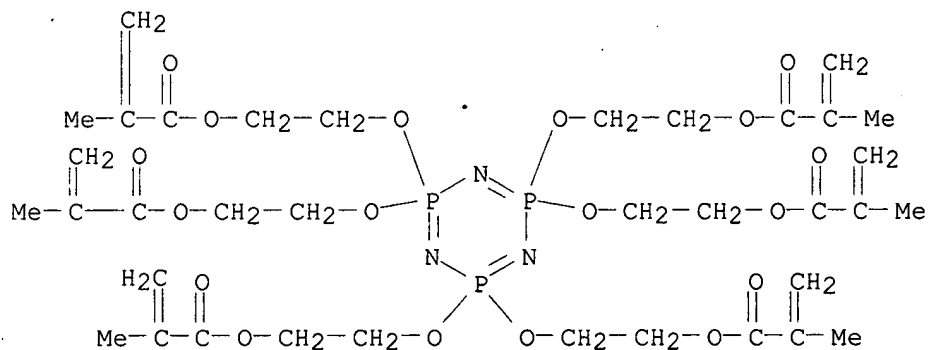
OTHER NAMES:

CN Aronix M 220-hexakis(methacryloyloxyethoxy)cyclotriphosphazene  
copolymer  
MF (C36 H54 N3 O18 P3 . C15 H24 O6)x  
CI PMS  
PCT Polyacrylic, Polyphosphazene, Polyphosphazene formed  
SR CA  
LC STN Files: CA, CAPLUS

CM 1

CRN 92832-53-6

CMF C36 H54 N3 O18 P3

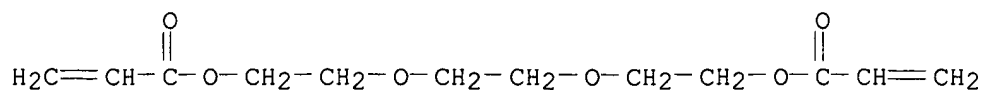


CM 2

CRN 42978-66-5

CMF C15 H24 O6

CCI IDS



3 ( D1-Me )

1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 2 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN

RN 827320-64-9 REGISTRY

ED Entered STN: 08 Feb 2005

CN 2-Propenoic acid, 2-hydroxyethyl ester, polymer with 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine (9CI) (CA INDEX NAME)

OTHER NAMES:

CN Hexakis(methacryloyloxyethoxy)cyclotriphosphazene-2-hydroxyethyl acrylate copolymer

MF (C36 H54 N3 O18 P3 . C5 H8 O3)x

CI PMS

PCT Polyacrylic, Polyphosphazene, Polyphosphazene formed

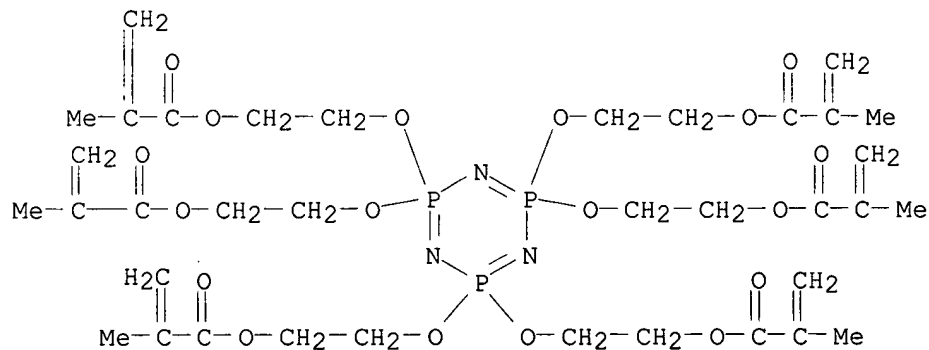
SR CA

LC STN Files: CA, CAPLUS

CM 1

CRN 92832-53-6

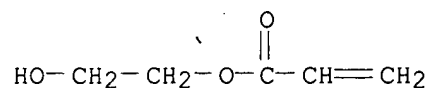
CMF C36 H54 N3 O18 P3



CM 2

CRN 818-61-1

CMF C5 H8 O3



1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 3 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN

RN 794574-57-5 REGISTRY

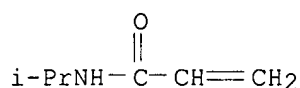
ED Entered STN: 08 Dec 2004  
CN 2-Propenamide, N-(1-methylethyl)-, polymer with 2,2,4,4,6,6-hexachloro-2,2,4,4,6,6-hexahydro-1,3,5,2,4,6-triazatriphosphorine, graft (9CI) (CA INDEX NAME)

OTHER NAMES:

CN Hexachlorocyclotriphosphazene-isopropylacrylamide graft copolymer  
MF (C6 H11 N O . Cl6 N3 P3)x  
CI PMS  
PCT Polyacrylic, Polyphosphazene, Polyphosphazene formed  
SR CA  
LC STN Files: CA, CAPLUS

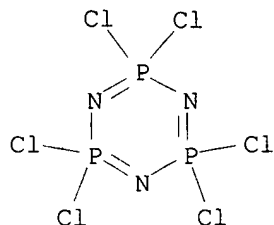
CM 1

CRN 2210-25-5  
CMF C6 H11 N O



CM 2

CRN 940-71-6  
CMF Cl6 N3 P3



4 REFERENCES IN FILE CA (1907 TO DATE)  
4 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

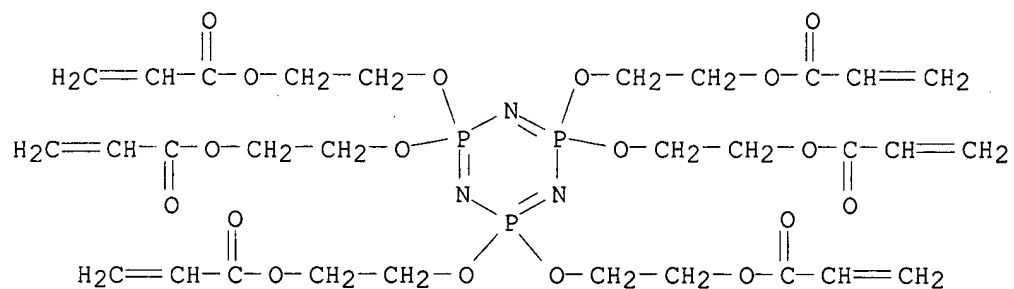
L4 ANSWER 4 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN  
RN 727704-44-1 REGISTRY  
ED Entered STN: 17 Aug 2004  
CN 1,4-Benzenedicarboxylic acid, polymer with 1,2-ethanediol, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine, 1,6-hexanediol, 2-hydroxypropyl 2-propenoate, 1,1'-methylenebis[isocyanatocyclohexane] and methyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

OTHER NAMES:

CN Ethylene glycol-1,1,3,3,5,5-hexakis(acryloylethylenedioxy)cyclotriphosphazene-1,6-hexanediol-2-hydroxypropyl acrylate-methylenebis(cyclohexyl isocyanate)-methyl methacrylate-terephthalic acid copolymer  
MF (C30 H42 N3 O18 P3 . Cl15 H22 N2 O2 . C8 H6 O4 . C6 H14 O2 . C6 H10 O3 . C5 H8 O2 . C2 H6 O2)x  
CI PMS  
PCT Polyacrylic, Polyamide, Polyamide formed, Polyester, Polyester formed, Polyphosphazene, Polyphosphazene formed  
SR CA  
LC STN Files: CA, CAPLUS

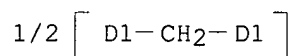
CM 1

CRN 137741-82-3  
CMF C30 H42 N3 O18 P3



CM 2

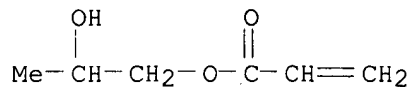
CRN 28605-81-4  
CMF C15 H22 N2 O2  
CCI IDS



D1-NCO

CM 3

CRN 999-61-1  
CMF C6 H10 O3



CM 4

CRN 629-11-8  
CMF C6 H14 O2

HO-(CH2)6-OH

CM 5

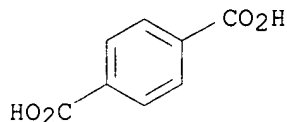
CRN 107-21-1

CMF C2 H6 O2

HO-CH<sub>2</sub>-CH<sub>2</sub>-OH

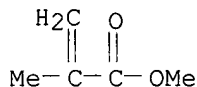
CM 6

CRN 100-21-0  
CMF C8 H6 O4



CM 7

CRN 80-62-6  
CMF C5 H8 O2

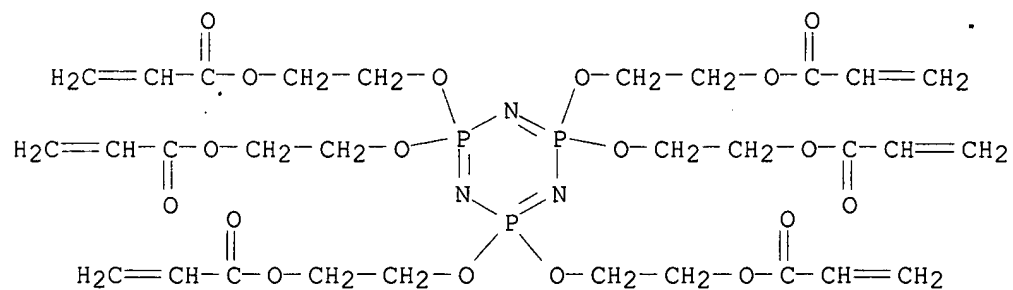


1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 5 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN  
RN 727704-34-9 REGISTRY  
ED Entered STN: 17 Aug 2004  
CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with  
2,4-diisocyanato-1-methylbenzene, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-  
hexakis[2-[(1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine,  
[(1-methyl-1,2-ethanediyl)bis(oxy)]bis[propanol] and methyl  
2-methyl-2-propenoate (9CI) (CA INDEX NAME)  
OTHER NAMES:  
CN 1,1,3,3,5,5-Hexakis(acryloylethylenedioxy)cyclotriphosphazene-2-  
hydroxyethyl methacrylate-methyl methacrylate-2,4-TDI-tripropylene glycol  
copolymer  
MF (C30 H42 N3 O18 P3 . C9 H20 O4 . C9 H6 N2 O2 . C6 H10 O3 . C5 H8 O2)x  
CI PMS  
PCT Polyacrylic, Polyether, Polyphosphazene, Polyphosphazene formed,  
Polyurethane, Polyurethane formed  
SR CA  
LC STN Files: CA, CAPLUS

CM 1

CRN 137741-82-3  
CMF C30 H42 N3 O18 P3

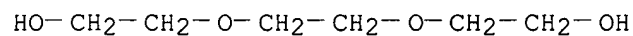


CM 2

CRN 24800-44-0

CMF C9 H20 O4

CCI IDS

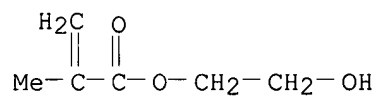


3 ( D1-Me )

CM 3

CRN 868-77-9

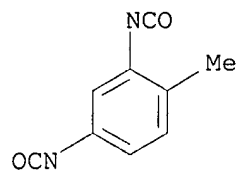
CMF C6 H10 O3



CM 4

CRN 584-84-9

CMF C9 H6 N2 O2

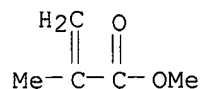


CM 5

CRN 80-62-6

CMF C5 H8 O2





1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 6 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN  
RN .552890-90-1 REGISTRY  
ED Entered STN: 23 Jul 2003  
CN 2-Propenamide, N-(1-methylethyl)-, polymer with 2-(4-ethenylphenoxy)-  
2,4,4,6,6-pentakis[4-(ethoxycarbonyl)phenoxy]-2,2,4,4,6,6-hexahydro-  
1,3,5,2,4,6-triazatriphosphorine (9CI) (CA INDEX NAME)

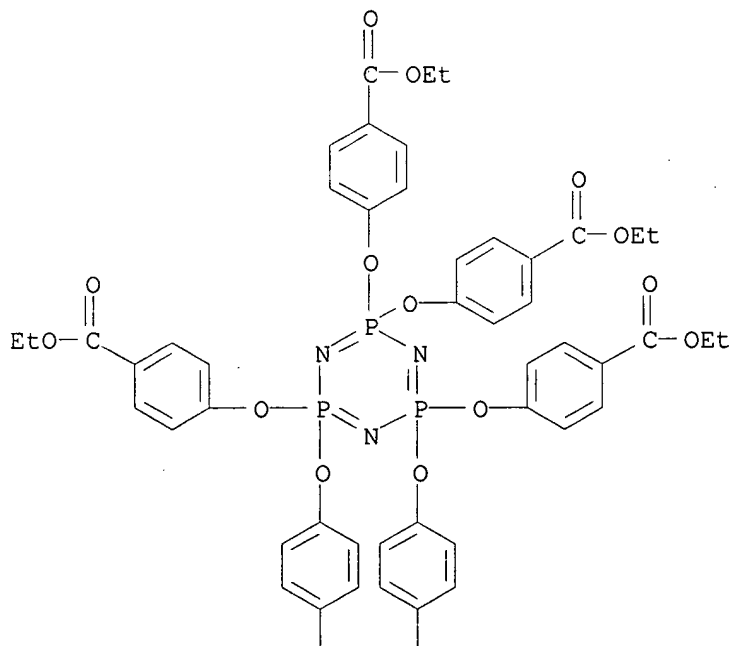
OTHER NAMES:

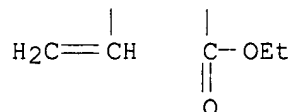
CN 2,4,4,6,6-Pentakis(4-ethoxycarbonylphenoxy)-2-(4-  
vinylphenoxy)cyclotriphosphazene-N-isopropylacrylamide copolymer  
MF (C53 H52 N3 O16 P3 . C6 H11 N O)x  
CI PMS  
PCT Polyacrylic, Polyphosphazene, Polyphosphazene formed, Polystyrene  
SR CA  
LC STN Files: CA, CAPLUS

CM 1

CRN 552890-89-8  
CMF C53 H52 N3 O16 P3

PAGE 1-A

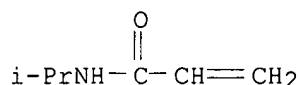




CM 2

CRN 2210-25-5

CMF C6 H11 N O



1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 7 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN

RN 273221-38-8 REGISTRY

ED Entered STN: 27 Jun 2000

CN Phosphonium, [(4-ethenylphenyl)methyl]trioctyl-, chloride, polymer with  
 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-  
 propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine (9CI) (CA INDEX  
 NAME)

OTHER CA INDEX NAMES:

CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-  
 hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-, polymer with  
 [(4-ethenylphenyl)methyl]trioctylphosphonium chloride (9CI)

OTHER NAMES:

CN Hexakis(methacryloyloxyethoxy)cyclotriphosphazene-trioctyl(4-  
 vinylbenzyl)phosphonium chloride) copolymer

MF (C36 H54 N3 O18 P3 . C33 H60 P . Cl)x

CI PMS

PCT Polyacrylic, Polyphosphazene, Polyphosphazene formed, Polystyrene

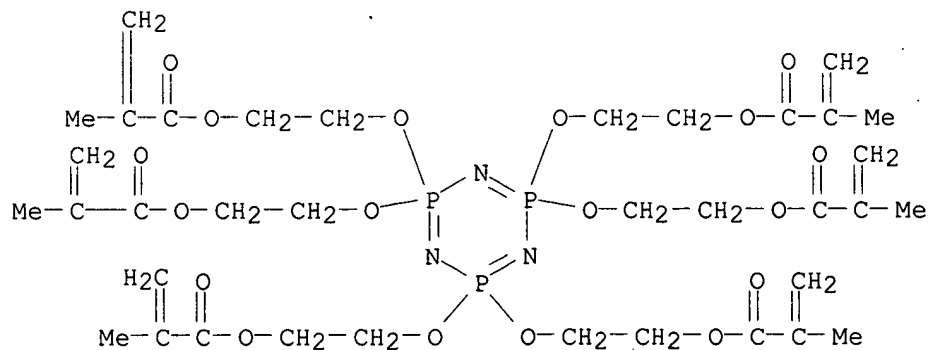
SR CA

LC STN Files: CA, CAPLUS

CM 1

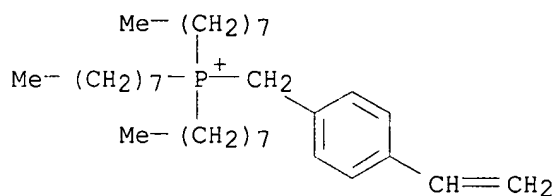
CRN 92832-53-6

CMF C36 H54 N3 O18 P3



CM 2

CRN 74443-79-1 (762190-78-3)  
CMF C33 H60 P . Cl



● Cl<sup>-</sup>

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 8 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN

RN 272119-38-7 REGISTRY

ED Entered STN: 22 Jun 2000

CN 2-Propenoic acid, 2-ethyl-2-[[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester, polymer with N,N-dimethyl-2-propenamide, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine and α-(1-oxo-2-propenyl)-ω-[(1-oxo-2-propenyl)oxy]poly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-, polymer with N,N-dimethyl-2-propenamide, 2-ethyl-2-[[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate and α-(1-oxo-2-propenyl)-ω-[(1-oxo-2-propenyl)oxy]poly(oxy-1,2-ethanediyl) (9CI)

CN 2-Propenamide, N,N-dimethyl-, polymer with 2-ethyl-2-[[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine and α-(1-oxo-2-propenyl)-ω-[(1-oxo-2-propenyl)oxy]poly(oxy-1,2-ethanediyl) (9CI)

CN Poly(oxy-1,2-ethanediyl), α-(1-oxo-2-propenyl)-ω-[(1-oxo-2-propenyl)oxy]-, polymer with N,N-dimethyl-2-propenamide, 2-ethyl-2-[[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate and 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine (9CI)

OTHER NAMES:

CN N,N-Dimethylacrylamide-hexakis(methacryloyloxyethoxy)cyclotriphosphazene-NK Ester A 600-trimethylolpropane triacrylate copolymer

MF (C<sub>36</sub> H<sub>54</sub> N<sub>3</sub> O<sub>18</sub> P<sub>3</sub> . C<sub>15</sub> H<sub>20</sub> O<sub>6</sub> . C<sub>5</sub> H<sub>9</sub> N O . (C<sub>2</sub> H<sub>4</sub> O)<sub>n</sub> C<sub>6</sub> H<sub>6</sub> O<sub>3</sub>)<sub>x</sub>

CI PMS

PCT Polyacrylic, Polyether, Polyphosphazene, Polyphosphazene formed

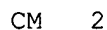
SR CA

LC STN Files: CA, CAPLUS

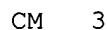
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CRN 92832-53-6

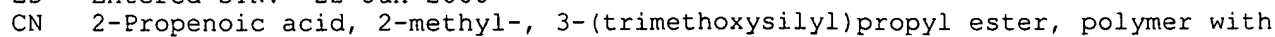
CMF C36 H54 N3 O18 P3



CCI PMS



CMF C15 H20 O6

C5H9NO

2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine and 2-methyl-2-[(1-oxo-2-propenyl)amino]-1-propanesulfonic acid monosodium salt (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

- CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-, polymer with 2-methyl-2-[(1-oxo-2-propenyl)amino]-1-propanesulfonic acid monosodium salt and 3-(trimethoxysilyl)propyl 2-methyl-2-propenoate (9CI)
- CN 1-Propanesulfonic acid, 2-methyl-2-[(1-oxo-2-propenyl)amino]-, monosodium salt, polymer with 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine and 3-(trimethoxysilyl)propyl 2-methyl-2-propenoate (9CI)

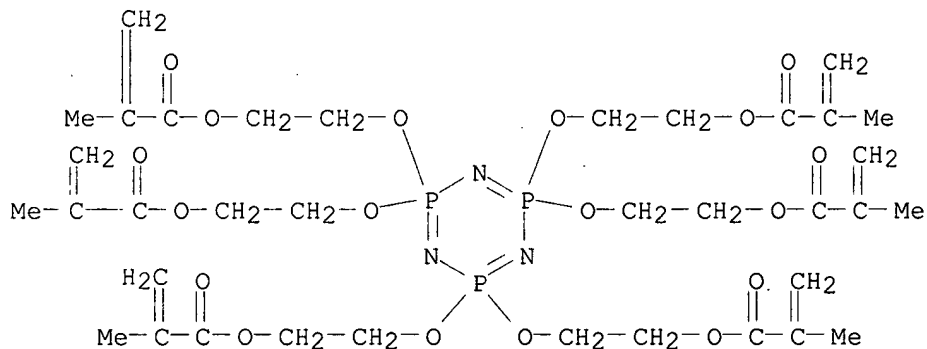
OTHER NAMES:

- CN Hexakis(methacryloyloxyethoxy)cyclotriphosphazene-KBM 503-sodium 2-acrylamido-2-methylpropanesulfonate copolymer
- MF (C36 H54 N3 O18 P3 . C10 H20 O5 Si . C7 H13 N O4 S . Na)x
- CI PMS
- PCT Polyacrylic, Polyphosphazene, Polyphosphazene formed
- SR CA
- LC STN Files: CA, CAPLUS

CM 1

CRN 92832-53-6

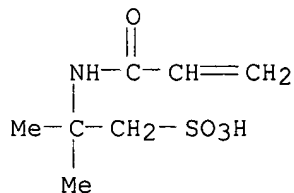
CMF C36 H54 N3 O18 P3



CM 2

CRN 5165-97-9 (15214-89-8)

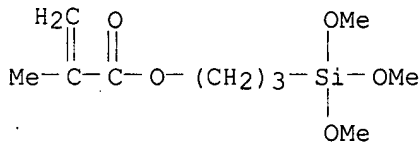
CMF C7 H13 N O4 S . Na



● Na

CM 3

CRN 2530-85-0  
CMF C10 H20 O5 Si



1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 10 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN

RN 272119-36-5 REGISTRY

ED Entered STN: 22 Jun 2000

CN 2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester, polymer with 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine and 3,3,4,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl 2-propenoate (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-, polymer with 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl 2-propenoate and 3-(trimethoxysilyl)propyl 2-methyl-2-propenoate (9CI)

CN 2-Propenoic acid, 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl ester, polymer with 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine and 3-(trimethoxysilyl)propyl 2-methyl-2-propenoate (9CI)

OTHER NAMES:

CN Hexakis (methacryloyloxyethoxy) cyclotriphosphazene-KBM  
503-2-(perfluorohexyl)ethyl acrylate copolymer

MF (C36 H54 N3 O18 P3 . C11 H7 F13 O2 . C10 H20 O5 Si)x

CI      PMS

PCT Polyacrylic, Polyphosphazene, Polyphosphazene formed

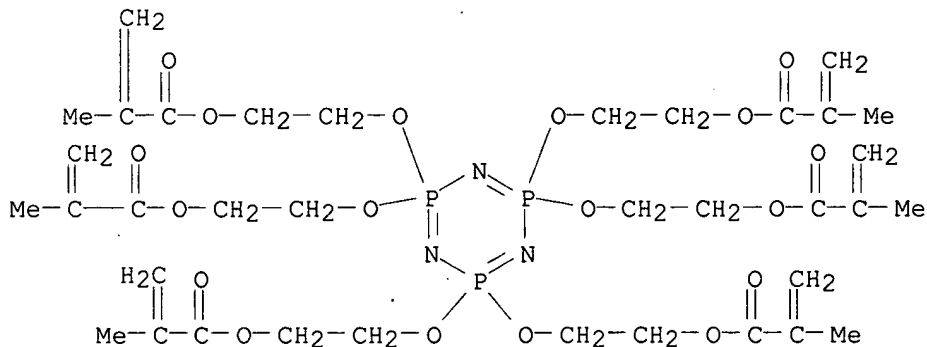
SR      CA

LC STN Files: CA, CAPLUS

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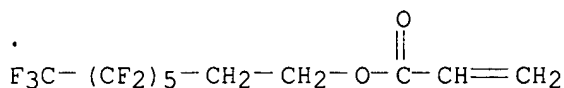
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CMF C36 H54 N3 O18 P3



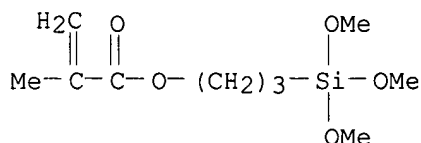
CM 2

CRN 17527-29-6  
CMF C11 H7 F13 O2



CM 3

CRN 2530-85-0  
CMF C10 H20 O5 Si



1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 11 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN

RN 272119-34-3 REGISTRY

ED Entered STN: 22 Jun 2000

CN 2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester, polymer with 2-ethyl-2-[[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine,  $\alpha$ -(1-oxo-2-propenyl)- $\omega$ -[(1-oxo-2-propenyl)oxy]poly(oxy-1,2-ethanediyl) and sodium 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-, polymer with 2-ethyl-2-[[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate,  $\alpha$ -(1-oxo-2-propenyl)- $\omega$ -[(1-oxo-2-propenyl)oxy]poly(oxy-1,2-ethanediyl), sodium 2-methyl-2-propenoate and 3-(trimethoxysilyl)propyl 2-methyl-2-propenoate (9CI)

CN 2-Propenoic acid, 2-ethyl-2-[[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester, polymer with 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine,  $\alpha$ -(1-oxo-2-propenyl)- $\omega$ -[(1-oxo-2-propenyl)oxy]poly(oxy-1,2-ethanediyl), sodium 2-methyl-2-propenoate and 3-(trimethoxysilyl)propyl 2-methyl-2-propenoate (9CI)

CN 2-Propenoic acid, 2-methyl-, sodium salt, polymer with 2-ethyl-2-[[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine,  $\alpha$ -(1-oxo-2-propenyl)- $\omega$ -[(1-oxo-2-propenyl)oxy]poly(oxy-1,2-ethanediyl) and 3-(trimethoxysilyl)propyl 2-methyl-2-propenoate (9CI)

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -(1-oxo-2-propenyl)- $\omega$ -[(1-oxo-2-propenyl)oxy]-, polymer with 2-ethyl-2-[[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine, sodium 2-methyl-2-propenoate and 3-(trimethoxysilyl)propyl 2-methyl-2-propenoate (9CI)

OTHER NAMES:

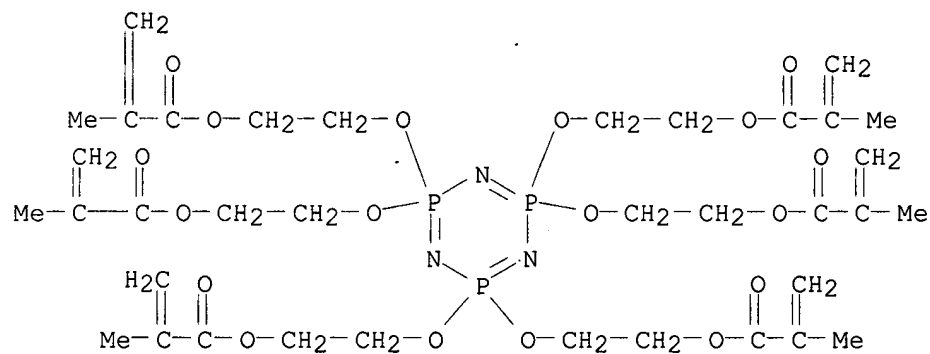
CN Hexakis(methacryloyloxyethoxy)cyclotriphosphazene-KBM 503-NK Ester A  
600-sodium methacrylate-trimethylolpropane triacrylate copolymer

MF (C36 H54 N3 O18 P3 . C15 H20 O6 . C10 H20 O5 Si . C4 H6 O2 . (C2 H4 O)<sub>n</sub> C6 H6 O3 . Na)<sub>x</sub>

CI PMS  
 PCT Polyacrylic, Polyether, Polyphosphazene, Polyphosphazene formed  
 SR CA  
 LC STN Files: CA, CAPLUS

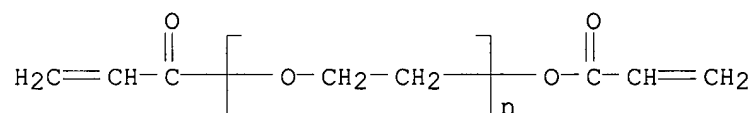
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CRN 92832-53-6  
 CMF C36 H54 N3 O18 P3



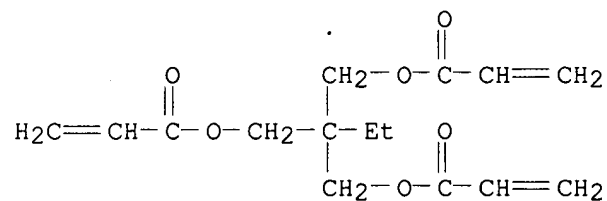
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CRN 26570-48-9  
 CMF (C2 H4 O)<sub>n</sub> C6 H6 O3  
 CCI PMS



CM 3

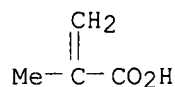
CRN 15625-89-5  
 CMF C15 H20 O6



CM 4

CRN 5536-61-8 (79-41-4)  
 CMF C4 H6 O2 . Na



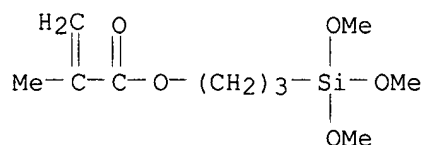


● Na

CM 5

CRN 2530-85-0

CMF C10 H20 O5 Si



1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 12 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN

RN 272119-33-2 REGISTRY

ED Entered STN: 22 Jun 2000

CN 1-Propanesulfonic acid, 2-methyl-2-[(1-oxo-2-propenyl)amino]-, monosodium salt, polymer with 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-, polymer with 2-methyl-2-[(1-oxo-2-propenyl)amino]-1-propanesulfonic acid monosodium salt (9CI)

OTHER NAMES:

CN Hexakis(methacryloyloxyethoxy)cyclotriphosphazene-sodium 2-acrylamido-2-methylpropanesulfonate copolymer

MF (C36 H54 N3 O18 P3 . C7 H13 N O4 S . Na)x

CI PMS

PCT Polyacrylic, Polyphosphazene, Polyphosphazene formed

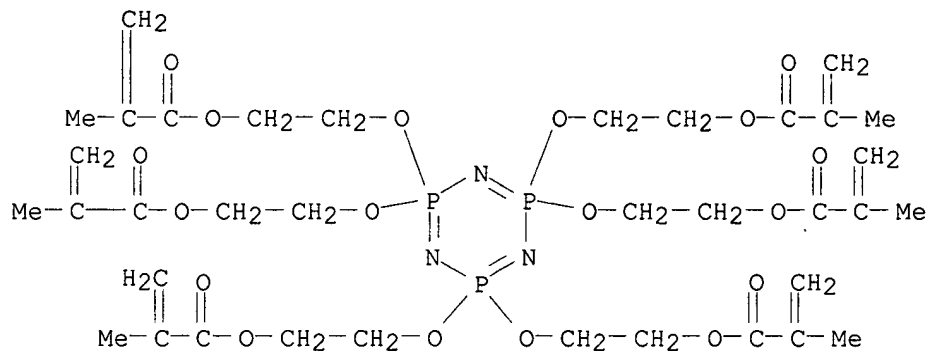
SR CA

LC STN Files: CA, CAPLUS

CM 1

CRN 92832-53-6

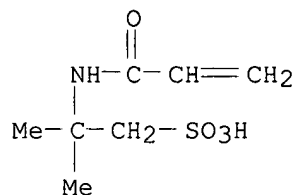
CMF C36 H54 N3 O18 P3



CM 2

CRN 5165-97-9 (15214-89-8)

CMF C7 H13 N O4 S . Na



● Na

1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 13 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN

RN 272119-32-1 REGISTRY

ED Entered STN: 22 Jun 2000

CN 2-Propenamide, N,N-dimethyl-, polymer with 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-, polymer with N,N-dimethyl-2-propenamide (9CI)

OTHER NAMES:

CN N,N-Dimethylacrylamide-hexakis(methacryloyloxyethoxy)cyclotriphosphazene copolymer

MF (C36 H54 N3 O18 P3 . C5 H9 N O)x

CI PMS

PCT Polyacrylic, Polyphosphazene, Polyphosphazene formed

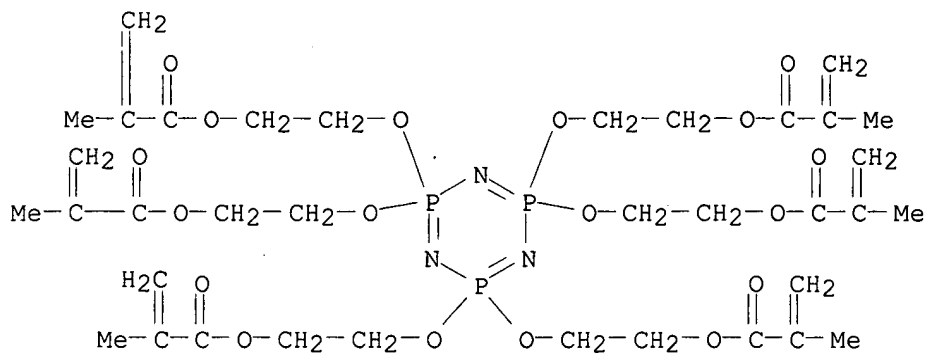
SR CA

LC STN Files: CA, CAPLUS

CM 1

CRN 92832-53-6

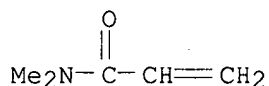
CMF C36 H54 N3 O18 P3



CM 2

CRN 2680-03-7

CMF C5 H9 N O



1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 14 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN

RN 255384-20-4 REGISTRY

ED Entered STN: 09 Feb 2000

CN 2-Propenoic acid, 2-methyl-, 2-(hydroxymethyl)-2-[[[(2-methyl-1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester, polymer with 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine and (1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] di-2-propenoate (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-, polymer with 2-(hydroxymethyl)-2-[[[(2-methyl-1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl bis(2-methyl-2-propenoate) and (1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] di-2-propenoate (9CI)

CN 2-Propenoic acid, (1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] ester, polymer with 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine and 2-(hydroxymethyl)-2-[[[(2-methyl-1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl bis(2-methyl-2-propenoate) (9CI)

OTHER NAMES:

CN Hexa(2-methacryloyloxyethoxy)cyclotriphosphazene-pentaerythritol trimethacrylate-Ripoxy SP 1509 copolymer

MF (C36 H54 N3 O18 P3 . C27 H32 O8 . C17 H24 O7)x

CI PMS

PCT Polyacrylic, Polyether, Polyphosphazene, Polyphosphazene formed

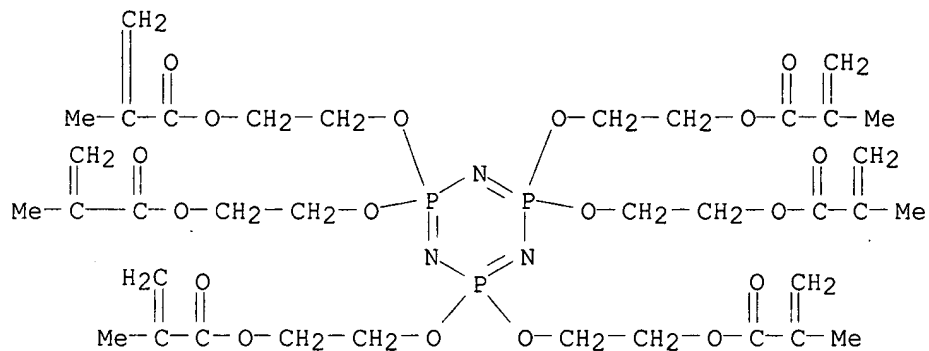
SR CA

LC STN Files: CA, CAPLUS, USPATFULL

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CRN 92832-53-6

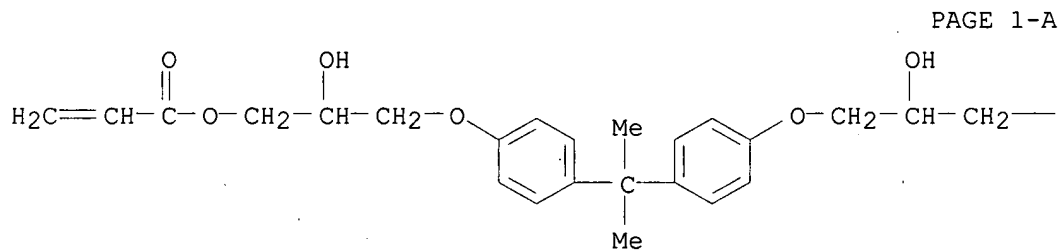
CMF C36 H54 N3 O18 P3



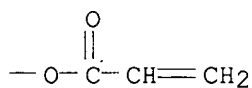
CM 2

CRN 4687-94-9

CMF C27 H32 O8



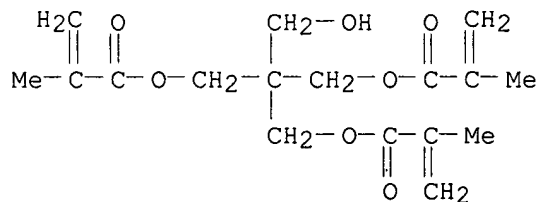
PAGE 1-B



CM 3

CRN 3524-66-1

CMF C17 H24 O7



2 REFERENCES IN FILE CA (1907 TO DATE)

2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 15 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN

RN 212397-70-1 REGISTRY

ED Entered STN: 08 Oct 1998

CN Benzenecarboperoxoic acid, 4,4'-carbonylbis[[[2-[(2-methyl-1-oxo-2-

propenyl)oxy]ethoxy]carbonyl]-, bis(1,1-dimethylethyl) ester, polymer with 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine and  $\alpha$ -(1-oxo-2-propenyl)- $\omega$ -[(1-oxo-2-propenyl)oxy]poly(oxy-1,2-ethanediyl), graft (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-, polymer with bis(1,1-dimethylethyl) 4,4'-carbonylbis[[[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]carbonyl]benzenecarboperoxoate] and  $\alpha$ -(1-oxo-2-propenyl)- $\omega$ -[(1-oxo-2-propenyl)oxy]poly(oxy-1,2-ethanediyl), graft (9CI)

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -(1-oxo-2-propenyl)- $\omega$ -[(1-oxo-2-propenyl)oxy]-, polymer with bis(1,1-dimethylethyl) 4,4'-carbonylbis[[[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]carbonyl]benzenecarboperoxoate] and 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine, graft (9CI)

OTHER NAMES:

CN 3,3'-Bis(methacryloyloxyethoxycarbonyl)-4,4'-bis(tert-butylperoxycarbonyl)benzophenone-polyethylene glycol diacrylate-hexakis(methacryloyloxyethoxy)cyclotriphosphazene graft copolymer

MF (C37 H42 O15 . C36 H54 N3 O18 P3 . (C2 H4 O)<sub>n</sub> C6 H6 O3)<sub>x</sub>

CI PMS

PCT Polyacrylic, Polyether, Polyphosphazene, Polyphosphazene formed

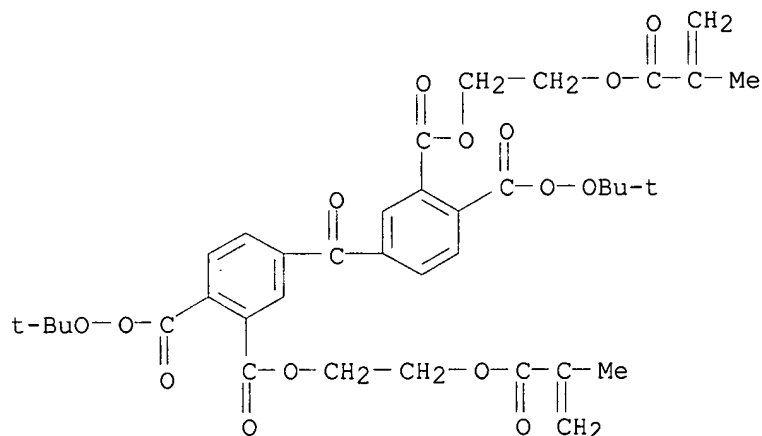
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LC STN Files: CA, CAPLUS

CM 1

CRN 204009-97-2

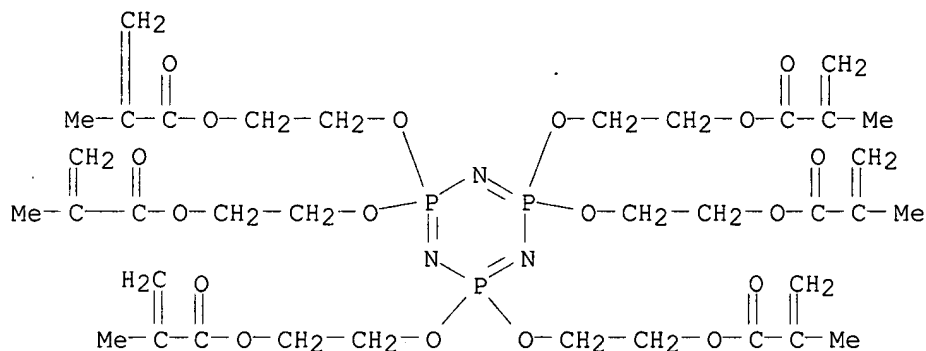
CMF C37 H42 O15



CM 2

CRN 92832-53-6

CMF C36 H54 N3 O18 P3

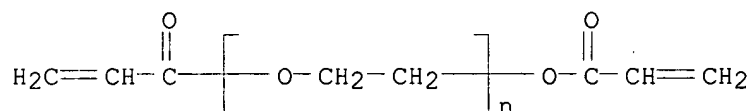


CM 3

CRN 26570-48-9

CMF (C2 H4 O)<sub>n</sub> C6 H6 O3

CCI PMS



1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 16 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN

RN 211051-32-0 REGISTRY

ED Entered STN: 10 Sep 1998

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with  
2,2,4,4-tetrachloro-6-[(ferrocenylmethyl)methylamino]-2,2,4,4,6,6-  
hexahydro-6-[4-[(2-methyl-1-oxo-2-propenyl)oxy]butoxy]-1,3,5,2,4,6-  
triazatriphosphorine (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4-tetrachloro-6-  
[(ferrocenylmethyl)methylamino]-2,2,4,4,6,6-hexahydro-6-[4-[(2-methyl-1-  
oxo-2-propenyl)oxy]butoxy]-, polymer with methyl 2-methyl-2-propenoate  
(9CI)

OTHER NAMES:

CN Methyl methacrylate-2,2,4,4-tetrachloro-2-  
(ferrocenylmethyl)(methyl)amino-6-(4-(2-methyl-2-  
propenoxyloxy)butoxy)cyclotriphosphazene copolymer

MF (C20 H27 Cl4 Fe N4 O3 P3 . C5 H8 O2)<sub>x</sub>

CI PMS

PCT Polyacrylic, Polyphosphazene, Polyphosphazene formed

SR CA

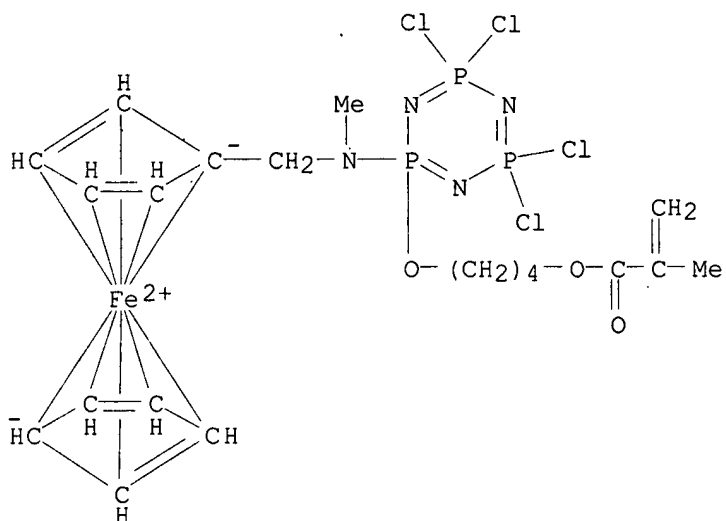
LC STN Files: CA, CAPLUS

CM 1

CRN 211051-09-1

CMF C20 H27 Cl4 Fe N4 O3 P3

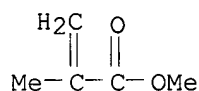
CCI CCS



CM 2

CRN 80-62-6

CMF C5 H8 O2



1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 17 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN

RN 200334-91-4 REGISTRY

ED Entered STN: 27 Jan 1998

CN Ethenol, polymer with 2,2,4,4,6-pentakis(4-ethylphenoxy)-2,2,4,4,6,6-hexahydro-6-[4-[(2-methyl-1-oxo-2-propenyl)oxy]phenoxy]-1,3,5,2,4,6-triazatriphosphorine, graft (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6-pentakis(4-ethylphenoxy)-2,2,4,4,6,6-hexahydro-6-[4-[(2-methyl-1-oxo-2-propenyl)oxy]phenoxy]-, polymer with ethenol, graft (9CI)

OTHER NAMES:

CN (4-Methacryloyloxy)pentakis(4-ethylphenoxy)cyclotriphosphazene-vinyl alcohol graft copolymer

MF (C50 H54 N3 O8 P3 . C2 H4 O)x

CI PMS

PCT Polyacrylic, Polyphosphazene, Polyphosphazene formed, Polyvinyl

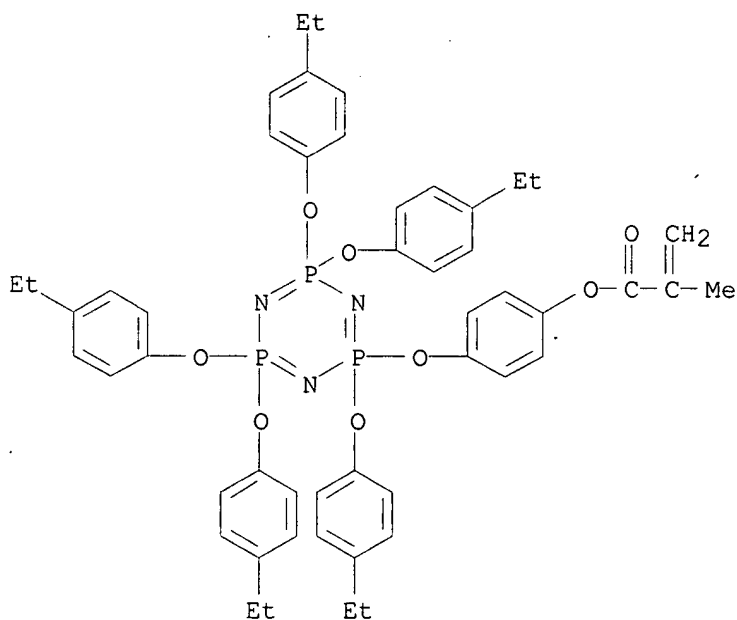
SR CA

LC STN Files: CA, CAPLUS

CM 1

CRN 200334-89-0

CMF C50 H54 N3 O8 P3



CM 2

CRN 557-75-5

CMF C2 H4 O

$\text{H}_2\text{C}=\text{CH}-\text{OH}$

1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 18 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN

RN 200334-90-3 REGISTRY

ED Entered STN: 27 Jan 1998

CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6-pentakis(4-ethylphenoxy)-  
2,2,4,4,6,6-hexahydro-6-[4-[(2-methyl-1-oxo-2-propenyl)oxy]phenoxy]-,  
homopolymer (9CI) (CA INDEX NAME)

OTHER NAMES:

CN (4-Methacryloyloxy)pentakis(4-ethylphenoxy)cyclotriphosphazene  
homopolymer

MF (C50 H54 N3 O8 P3)x

CI PMS

PCT Polyacrylic, Polyphosphazene, Polyphosphazene formed

SR CA

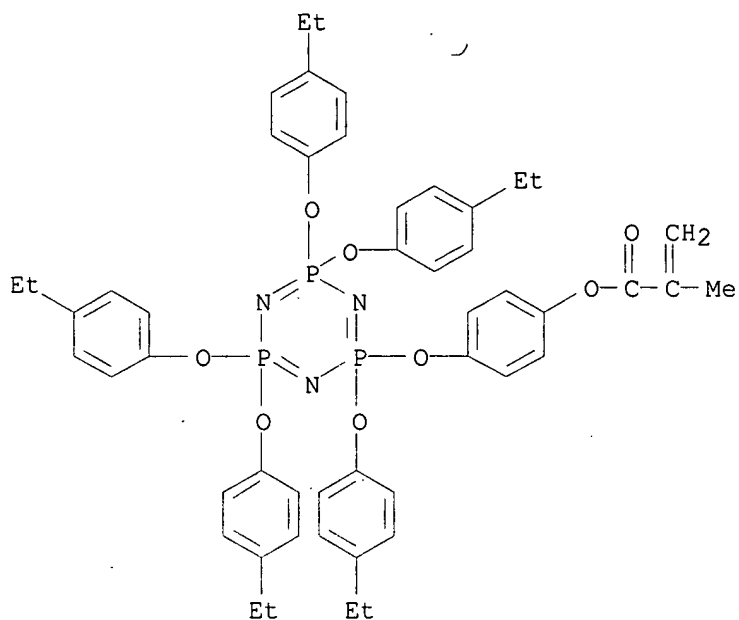
LC STN Files: CA, CAPLUS

CM 1

CRN 200334-89-0

CMF C50 H54 N3 O8 P3





1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 19 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN

RN 200334-89-0 REGISTRY

ED Entered STN: 27 Jan 1998

CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6-pentakis(4-ethylphenoxy)-  
2,2,4,4,6,6-hexahydro-6-[4-[(2-methyl-1-oxo-2-propenyl)oxy]phenoxy]- (9CI)  
(CA INDEX NAME)

OTHER NAMES:

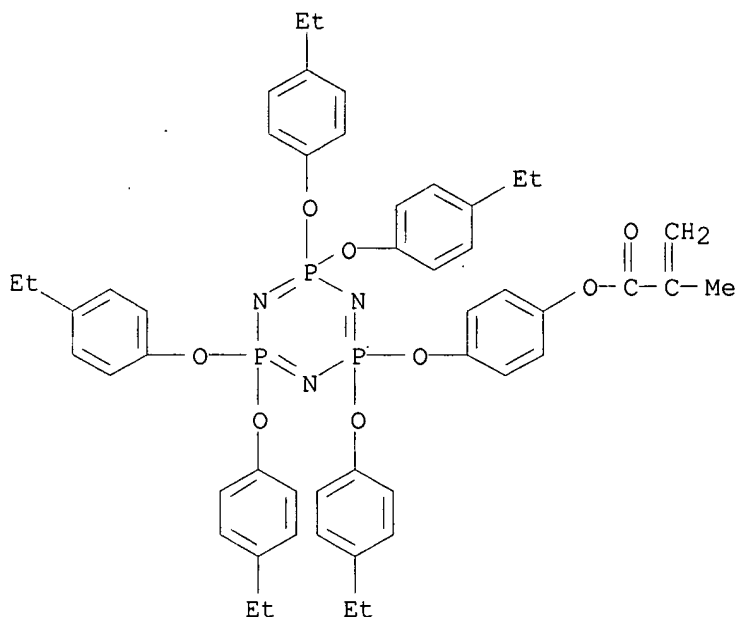
CN (4-Methacryloyloxy)pentakis(4-ethylphenoxy)cyclotriphosphazene

MF C50 H54 N3 O8 P3

CI COM

SR CA

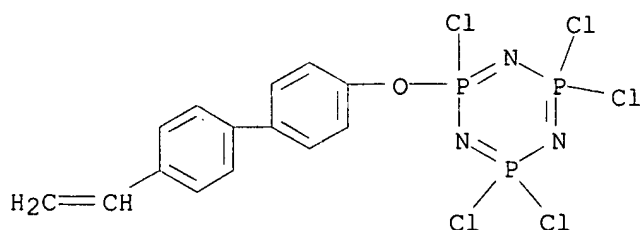
LC STN Files: CA, CAPLUS



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

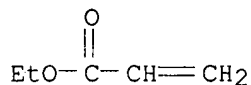
L4 ANSWER 20 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN  
RN 192944-35-7 REGISTRY  
ED Entered STN: 22 Aug 1997  
CN 2-Propenoic acid, ethyl ester, polymer with 2,2,4,4,6-pentachloro-6-[(4'-ethenyl[1,1'-biphenyl]-4-yl)oxy]-2,2,4,4,6,6-hexahydro-1,3,5,2,4,6-triazatriphosphorine (9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6-pentachloro-6-[(4'-ethenyl[1,1'-biphenyl]-4-yl)oxy]-2,2,4,4,6,6-hexahydro-, polymer with ethyl 2-propenoate (9CI)  
OTHER NAMES:  
CN Ethyl acrylate-2-(4'-vinyl-4-biphenyloxy)pentachlorocyclotriphosphazene copolymer  
MF (C14 H11 Cl5 N3 O P3 . C5 H8 O2)x  
CI PMS  
PCT Polyacrylic, Polyphosphazene, Polyphosphazene formed, Polystyrene  
SR CA  
LC STN Files: CA, CAPLUS  
  
CM 1  
  
CRN 115529-67-4  
CMF C14 H11 Cl5 N3 O P3



CM 2

CRN 140-88-5

CMF C5 H8 O2



1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 21 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN

RN 192944-34-6 REGISTRY

ED Entered STN: 22 Aug 1997

CN 2-Propenoic acid, methyl ester, polymer with 2,2,4,4,6-pentachloro-6-[(4'-ethenyl[1,1'-biphenyl]-4-yl)oxy]-2,2,4,4,6,6-hexahydro-1,3,5,2,4,6-triazatriphosphorine (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6-pentachloro-6-[(4'-ethenyl[1,1'-biphenyl]-4-yl)oxy]-2,2,4,4,6,6-hexahydro-, polymer with methyl 2-propenoate (9CI)

OTHER NAMES:

CN Methyl acrylate-2-(4'-vinyl-4-biphenyloxy)pentachlorocyclotriphosphazene copolymer

MF (C14 H11 Cl5 N3 O P3 . C4 H6 O2)x

CI PMS

PCT Polyacrylic, Polyphosphazene, Polyphosphazene formed, Polystyrene

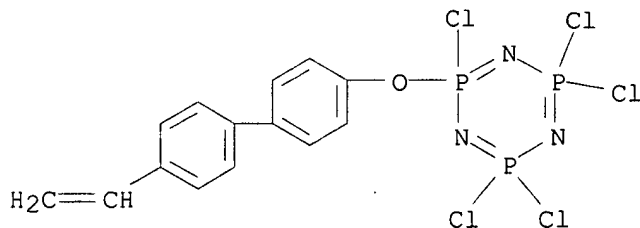
SR CA

LC STN Files: CA, CAPLUS

CM 1

CRN 115529-67-4

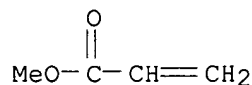
CMF C14 H11 Cl5 N3 O P3



CM 2

CRN 96-33-3

CMF C4 H6 O2



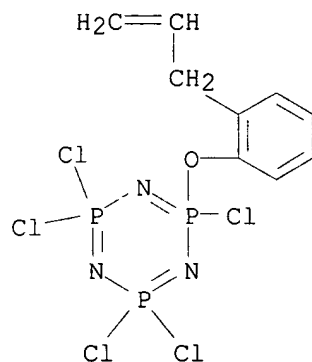
1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 22 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN  
 RN 181940-31-8 REGISTRY  
 ED Entered STN: 15 Oct 1996  
 CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with  
 2,2,4,4,6-pentachloro-2,2,4,4,6,6-hexahydro-6-[2-(2-propenyl)phenoxy]-  
 1,3,5,2,4,6-triazatriphosphorine (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6-pentachloro-2,2,4,4,6,6-  
 hexahydro-6-[2-(2-propenyl)phenoxy]-, polymer with methyl  
 2-methyl-2-propenoate (9CI)  
 OTHER NAMES:  
 CN 2-Allylphenoxy pentachlorocyclotriphosphazene-methyl methacrylate  
 copolymer  
 MF (C9 H9 Cl5 N3 O P3 . C5 H8 O2)x  
 CI PMS  
 PCT Polyacrylic, Polyphosphazene, Polyphosphazene formed, Polyvinyl  
 SR CA  
 LC STN Files: CA, CAPLUS

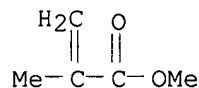
CM 1

CRN 137856-38-3  
 CMF C9 H9 Cl5 N3 O P3



CM 2

CRN 80-62-6  
 CMF C5 H8 O2



3 REFERENCES IN FILE CA (1907 TO DATE)  
 3 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 23 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN  
 RN 180090-93-1 REGISTRY  
 ED Entered STN: 27 Aug 1996  
 CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with  
 2,2,4,4,6,6-hexahydro-2-[2-(2-propenyl)phenoxy]-2,4,4,6,6-pentakis(2,2,2-  
 trifluoroethoxy)-1,3,5,2,4,6-triazatriphosphorine (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexahydro-2-[2-(2-  
 propenyl)phenoxy]-2,4,4,6,6-pentakis(2,2,2-trifluoroethoxy)-, polymer with

methyl 2-methyl-2-propenoate (9CI)

OTHER NAMES:

CN 2-Allylphenoxy-penta(2,2,2-trifluoroethoxy)cyclotriphosphazene-methyl methacrylate copolymer

MF (C19 H19 F15 N3 O6 P3 . C5 H8 O2)x

CI PMS

PCT Polyacrylic, Polyphosphazene, Polyphosphazene formed, Polyvinyl

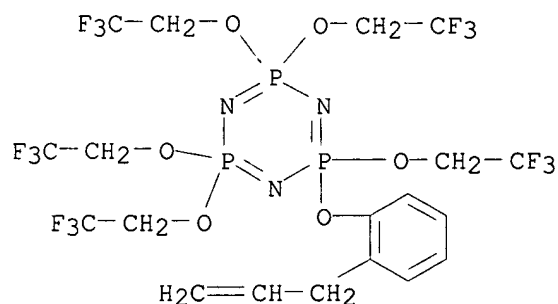
SR CA

LC STN Files: CA, CAPLUS

CM 1

CRN 180090-88-4

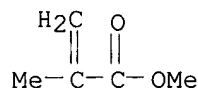
CMF C19 H19 F15 N3 O6 P3



CM 2

CRN 80-62-6

CMF C5 H8 O2



3 REFERENCES IN FILE CA (1907 TO DATE)

3 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 24 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN

RN 180090-90-8 REGISTRY

ED Entered STN: 27 Aug 1996

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with 2,2,4,4,6,6-hexahydro-2,2,4,4,6-pentaphenoxy-6-[2-(2-propenyl)phenoxy]-1,3,5,2,4,6-triazatriphosphorine (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexahydro-2,2,4,4,6-pentaphenoxy-6-[2-(2-propenyl)phenoxy]-, polymer with methyl 2-methyl-2-propenoate (9CI)

OTHER NAMES:

CN 2-Allylphenoxy-pentaphenoxy-cyclotriphosphazene-methyl methacrylate copolymer

MF (C39 H34 N3 O6 P3 . C5 H8 O2)x

CI PMS

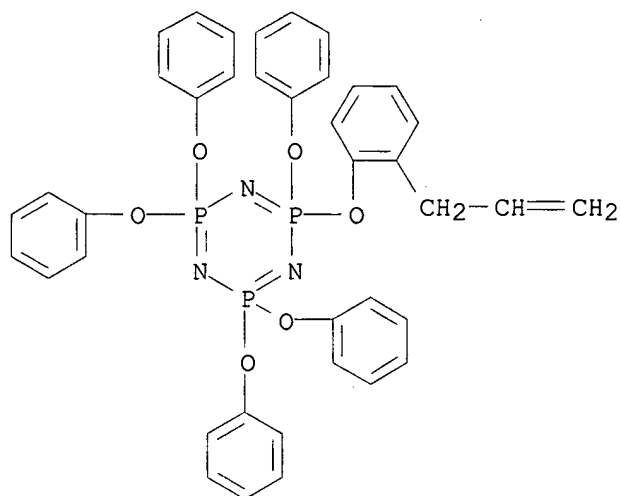
PCT Polyacrylic, Polyphosphazene, Polyphosphazene formed, Polyvinyl

SR CA

LC STN Files: CA, CAPLUS

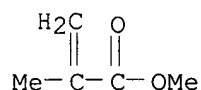
CM 1

CRN 137856-40-7  
CMF C39 H34 N3 O6 P3



CM 2

CRN 80-62-6  
CMF C5 H8 O2



3 REFERENCES IN FILE CA (1907 TO DATE)  
3 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 25 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN  
RN 171729-46-7 REGISTRY  
ED Entered STN: 22 Dec 1995  
CN 2-Propenamide, N-(1-methylethyl)-; polymer with 1-ethenyl-2-pyrrolidinone and 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl]-1,3,5,2,4,6-triazatriphosphorine (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl]-, polymer with 1-ethenyl-2-pyrrolidinone and N-(1-methylethyl)-2-propenamide (9CI)  
CN 2-Pyrrolidinone, 1-ethenyl-, polymer with 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl]-1,3,5,2,4,6-triazatriphosphorine and N-(1-methylethyl)-2-propenamide (9CI)

OTHER NAMES:

CN Hexakis(2-methacryloxyethyl)cyclotriphosphazene-N-isopropylacrylamide-N-vinyl-2-pyrrolidone copolymer

MF (C36 H54 N3 O12 P3 . C6 H11 N O . C6 H9 N O)x

CI PMS

PCT Polyacrylic, Polyphosphazene, Polyphosphazene formed, Polyvinyl

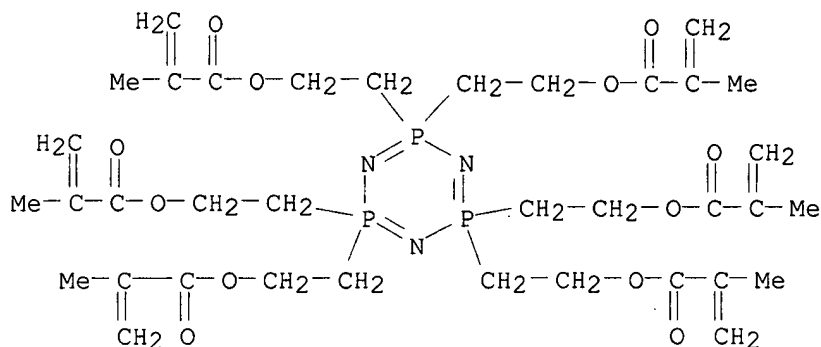
SR CA

LC STN Files: CA, CAPLUS

CM 1

CRN 171729-45-6

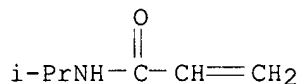
CMF C36 H54 N3 O12 P3



CM 2

CRN 2210-25-5

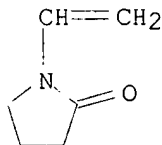
CMF C6 H11 N O



CM 3

CRN 88-12-0

CMF C6 H9 N O



1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 26 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN

RN 155880-83-4 REGISTRY

ED Entered STN: 22 Jun 1994

CN 11,15-Dioxa-2,9-diazaoctadec-17-enoic acid, 10,16-dioxo-13,13-bis[[ (1-oxo-2-propenyl)oxy]methyl]-, 3-[[ (1-oxo-2-propenyl)oxy]-2,2-bis[[ (1-oxo-2-propenyl)oxy]methyl]propyl ester, polymer with 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine and Sartomer C 9505 (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-, polymer with 3-[[ (1-oxo-2-propenyl)oxy]-2,2-bis[[ (1-oxo-2-propenyl)oxy]methyl]propyl 10,16-dioxo-13,13-bis[[ (1-oxo-2-propenyl)oxy]methyl]-11,15-dioxa-2,9-diazaoctadec-17-enoate and Sartomer C 9505 (9CI)

CN Sartomer C 9505, polymer with 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine and 3-[[ (1-oxo-2-propenyl)oxy]-2,2-bis[[ (1-oxo-2-propenyl)oxy]methyl]propyl 10,16-dioxo-13,13-bis[[ (1-oxo-2-propenyl)oxy]methyl]-11,15-dioxa-2,9-diazaoctadec-17-enoate (9CI)

OTHER NAMES:

CN 1,1,3,3,5,5-hexa(methacryloylethylenedioxy)cyclotriphosphazene-  
Sartomer 9505-UA 306H copolymer  
MF (C36 H54 N3 O18 P3 . C36 H48 N2 O16 . Unspecified)x  
CI PMS  
PCT Manual component, Polyacrylic, Polyether, Polyphosphazene, Polyphosphazene  
formed  
SR CA  
LC STN Files: CA, CAPLUS

CM 1

CRN 126904-04-9

CMF Unspecified

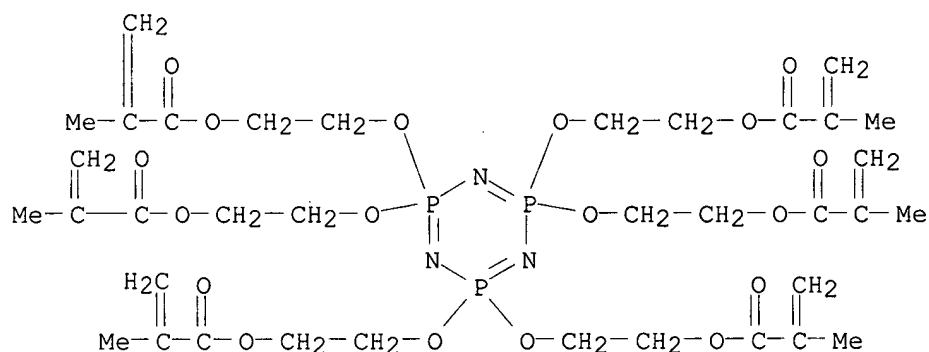
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 92832-53-6

CMF C36 H54 N3 O18 P3

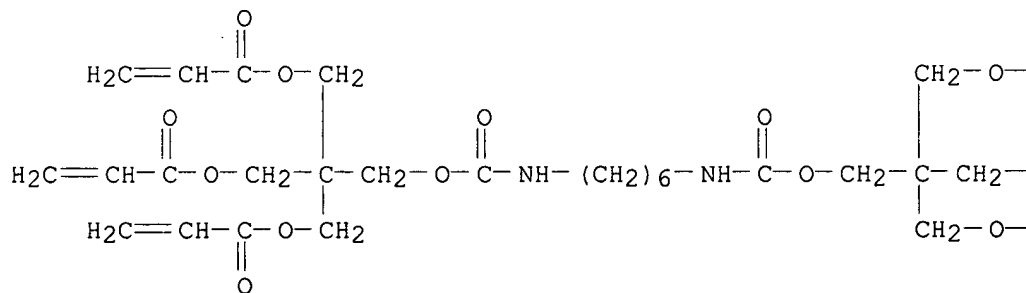


CM 3

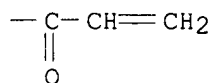
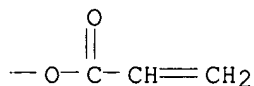
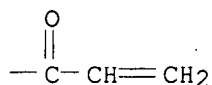
CRN 77001-81-1

CMF C36 H48 N2 O16

PAGE 1-A







1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 27 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN

RN 122847-49-8 REGISTRY

ED Entered STN: 22 Sep 1989

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with  
2,2,4,4,6-pentachloro-6-[(4'-ethenyl[1,1'-biphenyl]-4-yl)oxy]-2,2,4,4,6,6-hexahydro-1,3,5,2,4,6-triazatriphosphorine (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6-pentachloro-6-[(4'-ethenyl[1,1'-biphenyl]-4-yl)oxy]-2,2,4,4,6,6-hexahydro-, polymer with methyl 2-methyl-2-propenoate (9CI)

OTHER NAMES:

CN Methyl methacrylate-2-(4'-vinyl-4-biphenyloxy)pentachlorocyclotriphosphazene copolymer

MF (C14 H11 Cl5 N3 O P3 . C5 H8 O2)x

CI PMS

PCT Polyacrylic, Polyphosphazene, Polyphosphazene formed, Polystyrene

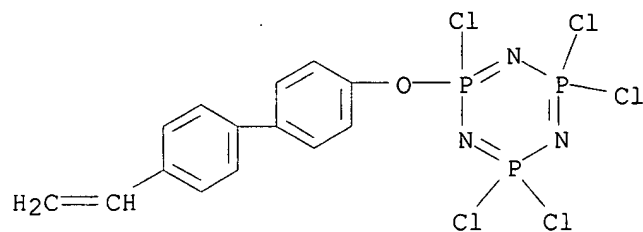
SR CA

LC STN Files: CA, CAPLUS

CM 1

CRN 115529-67-4

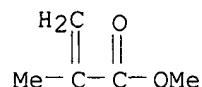
CMF C14 H11 Cl5 N3 O P3



CM 2

CRN 80-62-6

CMF C5 H8 O2

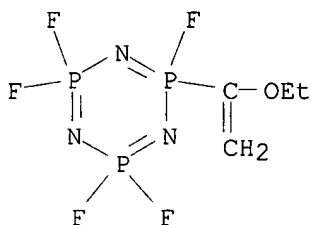


2 REFERENCES IN FILE CA (1907 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 28 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN  
RN 99798-90-0 REGISTRY  
ED Entered STN: 18 Jan 1986  
CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with  
2-(1-ethoxyethenyl)-2,4,4,6,6-pentafluoro-2,2,4,4,6,6-hexahydro-  
1,3,5,2,4,6-triazatriphosphorine (9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN 1,3,5,2,4,6-Triazatriphosphorine, 2-(1-ethoxyethenyl)-2,4,4,6,6-  
pentafluoro-2,2,4,4,6,6-hexahydro-, polymer with methyl  
2-methyl-2-propenoate (9CI)  
OTHER NAMES:  
CN ( $\alpha$ -Ethoxyvinyl)pentafluorocyclotriphosphazene-methyl  
methacrylate copolymer  
MF (C5 H8 O2 . C4 H7 F5 N3 O P3)x  
CI PMS  
PCT Polyacrylic, Polyphosphazene, Polyphosphazene formed, Polyvinyl  
SR CA  
LC STN Files: CA, CAPLUS

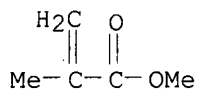
CM 1

CRN 80297-67-2  
CMF C4 H7 F5 N3 O P3



CM 2

CRN 80-62-6  
CMF C5 H8 O2



1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

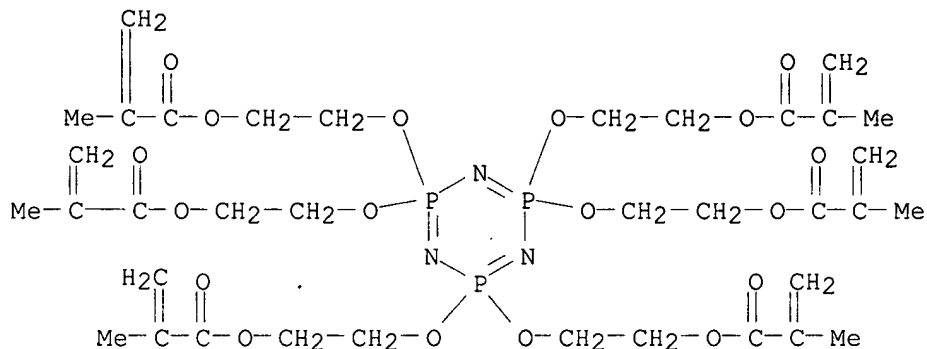
L4 ANSWER 29 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN  
RN 92832-54-7 REGISTRY  
ED Entered STN: 17 Dec 1984  
CN 2-Propenoic acid, 2-methyl-, 1,2-ethanediylbis(oxy-2,1-ethanediyl) ester,  
polymer with 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-  
2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine (9CI) (CA INDEX  
NAME)  
OTHER CA INDEX NAMES:  
CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-  
hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-, polymer with  
1,2-ethanediylbis(oxy-2,1-ethanediyl) bis(2-methyl-2-propenoate) (9CI)  
OTHER NAMES:

CN Hexakis(methacryloyloxyethoxy)cyclotriphosphazene-triethylene glycol  
dimethacrylate copolymer  
MF (C36 H54 N3 O18 P3 . C14 H22 O6)x  
CI PMS  
PCT Polyacrylic, Polyphosphazene, Polyphosphazene formed  
LC STN Files: CA, CAPLUS, USPATFULL

CM 1

CRN 92832-53-6

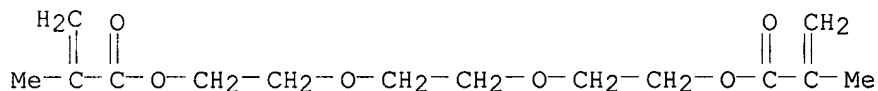
CMF C36 H54 N3 O18 P3



CM 2

CRN 109-16-0

CMF C14 H22 O6



4 REFERENCES IN FILE CA (1907 TO DATE)

4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 30 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN

RN 92832-53-6 REGISTRY

ED Entered STN: 17 Dec 1984

CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]- (9CI) (CA INDEX NAME)

OTHER NAMES:

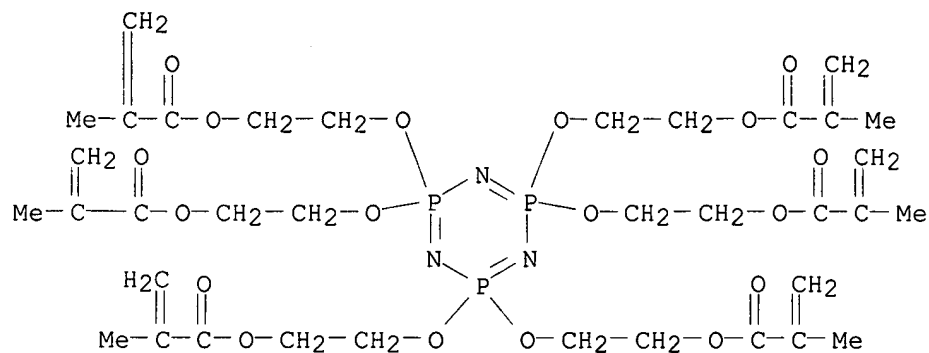
CN Hexakis(methacryloyloxyethoxy)cyclotriphosphazene

DR 123522-97-4

MF C36 H54 N3 O18 P3

CI COM

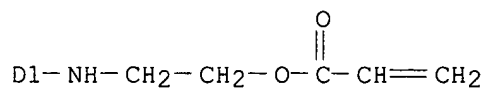
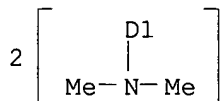
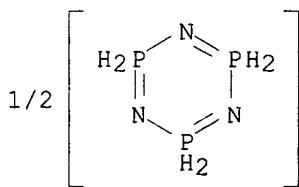
LC STN Files: CA, CAPLUS, CASREACT, CHEMLIST, MEDLINE, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

48 REFERENCES IN FILE CA (1907 TO DATE)  
 3 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 48 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 31 OF 31 REGISTRY COPYRIGHT 2006 ACS on STN  
 RN 41407-17-4 REGISTRY  
 ED Entered STN: 16 Nov 1984  
 CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4(or 2,2,4,6)-  
 tetrakis(dimethylamino)-2,2,4,4,6,6-hexahydro-6,6(or 4,6)-bis[[2-[(1-oxo-2-  
 propenyl)oxy]ethyl]amino]- (9CI) (CA INDEX NAME)  
 OTHER NAMES:  
 CN Bis(acryloyloxyethylamino)tetrakis(dimethylamino)cyclotriphosphazene\*  
 \*\*  
 MF C18 H40 N9 O4 P3  
 CI IDS  
 LC STN Files: CA, CAPLUS, IFICDB, IFIPAT, IFIUDB



1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> S BIURET  
L5 1216 BIURET

=> S BIURET?  
L6 1216 BIURET?

=> S L6 AND (ACRYL ENE ALLYL)  
103858 ACRYL  
6304255 ENE  
58502 ALLYL  
0 ACRYL ENE ALLYL  
(ACRYL(W)ENE(W)ALLYL)  
L7 0 L6 AND (ACRYL ENE ALLYL)

=> D HIS

(FILE 'HOME' ENTERED AT 08:07:37 ON 04 SEP 2006)

FILE 'REGISTRY' ENTERED AT 08:07:48 ON 04 SEP 2006

L1 492 S PHOSHAZENE  
L2 31 S L1 AND ACRYL?  
L3 6 S L2 AND ENE  
L4 31 S L2 OR L3  
L5 1216 S BIURET  
L6 1216 S BIURET?  
L7 0 S L6 AND (ACRYL ENE ALLYL)

=> FILE REG

COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	130.06	130.27
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	-4.26	-4.26

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STRUCTURE FILE UPDATES: 3 SEP 2006 HIGHEST RN 905815-43-2  
DICTIONARY FILE UPDATES: 3 SEP 2006 HIGHEST RN 905815-43-2

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predicted properties as well as tags indicating availability of  
experimental property data in the original document. For information  
on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>

=> S L4  
L8 31 L2 OR L3

=> FILE CAPLUS

COST IN U.S. DOLLARS	SINCE FILE	TOTAL
FULL ESTIMATED COST	ENTRY	SESSION
	0.44	130.71
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
CA SUBSCRIBER PRICE	ENTRY	SESSION
	0.00	-4.26

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FILE COVERS 1907 - 4 Sep 2006 VOL 145 ISS 11  
 FILE LAST UPDATED: 3 Sep 2006 (20060903/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply. They are available for your review at:

<http://www.cas.org/infopolicy.html>

=> S L8  
 L9 70 L8

=> D ALL 1-70

L9 ANSWER 1 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2006:2108 CAPLUS  
 DN 144:150886  
 ED Entered STN: 03 Jan 2006  
 TI Multimorphological Self-Assemblies of Amphiphilic Graft Polyphosphazenes with Oligopoly(N-isopropylacrylamide) and Ethyl 4-Aminobenzoate as Side Groups  
 AU Zhang, Jian Xiang; Qiu, Li Yan; Jin, Yi; Zhu, Kang Jie  
 CS College of Pharmaceutical Sciences, Zhejiang University, Hangzhou, 310031, Peop. Rep. China  
 SO Macromolecules (2006), 39(1), 451-455  
 CODEN: MAMOBX; ISSN: 0024-9297  
 PB American Chemical Society  
 DT Journal  
 LA English  
 CC 36-2 (Physical Properties of Synthetic High Polymers)  
 Section cross-reference(s): 35  
 AB Both TEM and AFM observations indicated that the self-assembly morphol. of the title graft copolymer were regulated along with the variation of copolymer composition which could be achieved due to the synthetic flexibility and versatility of polyphosphazene. Depending on various solvents used in aggregate preparation procedure, multimorphol. assemblies ranging from network structure and nanospheres to high-genus particles were observed for the copolymer containing a relatively high Et aminobenzoate content. The temperature would induce the morphol. change of aggregates, which was resulted from the thermosensitivity of polyisopropylacrylamide segments in the copolymers.

ST multimorphol self assembly graft polyphosphazene  
oligopolyisopropylacrylamide aminobenzoate

IT Critical solution temperature  
(lower; multimorphol. self-assemblies of amphiphilic graft  
polyphosphazenes with oligopoly(isopropylacrylamide) and Et  
aminobenzoate as side groups)

IT Polymer morphology  
Self-assembly  
(multimorphol. self-assemblies of amphiphilic graft polyphosphazenes  
with oligopoly(isopropylacrylamide) and Et aminobenzoate as side  
groups)

IT Polyphosphazenes  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(multimorphol. self-assemblies of amphiphilic graft polyphosphazenes  
with oligopoly(isopropylacrylamide) and Et aminobenzoate as side  
groups)

IT 156-57-ODP, 2-Aminoethanethiol hydrochloride, reaction products with  
polyisopropylacrylamide 25189-55-3DP, Polyisopropylacrylamide, reaction  
products with aminoethanethiol hydrochloride  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(in preparation of amphiphilic graft polyphosphazenes with  
oligopoly(isopropylacrylamide) and Et aminobenzoate as side groups)

IT 94-09-7DP, Ethyl 4-aminobenzoate, reaction products with  
hexachlorocyclotriphosphazene-isopropylacrylamide graft copolymer  
794574-57-5DP, Hexachlorocyclotriphosphazene-isopropylacrylamide  
graft copolymer, reaction products with Et aminobenzoate  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(multimorphol. self-assemblies of amphiphilic graft polyphosphazenes  
with oligopoly(isopropylacrylamide) and Et aminobenzoate as side  
groups)

RE.CNT 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD .

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L9 ANSWER 2 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:1258917 CAPLUS

DN 144:129539

ED Entered STN: 01 Dec 2005

TI Solvent controlled multi-morphological self-assembly of amphiphilic graft copolymers

AU Zhang, Jian Xiang; Qiu, Li Yan; Zhu, Kang Jie

CS College of Pharmaceutical Sciences, Zhejiang University, Hangzhou, 310027, Peop. Rep. China

SO Macromolecular Rapid Communications (2005), 26(21), 1716-1723

CODEN: MRCOE3; ISSN: 1022-1336

PB Wiley-VCH Verlag GmbH & Co. KGaA

DT Journal

LA English

CC 36-7 (Physical Properties of Synthetic High Polymers)

AB Amphiphilic graft polyphosphazenes (tryptophan Et ester/poly(N-isopropylacrylamide)-hexachloro-cyclo-tri-phosphazene) with different mole ratios of hydrophobic groups to hydrophilic segments were synthesized by ring-opening polymerization and subsequent substitution reactions. The self-assembly behavior of these graft copolymers was studied in detail. Depending on the copolymer composition and common organic solvent employed in dialysis process, supramol. aggregates ranging from network, nano-spheres, high-genus particles to macrophage-like aggregates were produced with graft copolymers.

ST polyphosphazene graft morphol self assembly solvent amphiphiles

IT Solvents

(organic; solvent controlled multi morphol. self-assembly of amphiphilic graft copolymers)

IT Aggregates

Amphiphiles

Polymer morphology

Self-assembly

(solvent controlled multi morphol. self-assembly of amphiphilic graft copolymers)

IT 67-56-1, Methanol, uses 67-64-1, Acetone, uses 67-68-5,

Dimethylsulfoxide, uses 109-99-9, uses 127-19-5, N,N-Dimethylacetamide

RL: NUU (Other use, unclassified); USES (Uses)

(solvent controlled multi morphol. self-assembly of amphiphilic graft copolymers)

IT 6519-66-0D, reaction products with hexachloro-cyclo -tri-phosphazene-

isopropylacrylamide graft copolymer 794574-57-5D, reaction

products with tryptophan Et ester

RL: PRP (Properties)

(solvent controlled multi morphol. self-assembly of amphiphilic graft copolymers)

RE.CNT 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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L9 ANSWER 3 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:1019366 CAPLUS

DN 144:489226

ED Entered STN: 22 Sep 2005

TI Thermosensitive self-assembly behaviors of novel amphiphilic polyphosphazenes

AU Qiu, Liyan; Zhang, Jianxiang; Jin, Yi; Zhu, Kangjie

CS College of Pharmaceutical Sciences, Zhejiang University, Hangzhou, 310031, Peop. Rep. China

SO Chinese Science Bulletin (2005), 50(14), 1453-1455

CODEN: CSBUEF; ISSN: 1001-6538

PB Science in China Press

DT Journal

LA English

CC 36-6 (Physical Properties of Synthetic High Polymers)

AB Amphiphilic thermosensitive polyphosphazenes (PNIPAm-g-PPP) bearing N-isopropylacrylamide oligomers (oligo-PNIPAm) and glycine Et groups (GlyEt) as co-substituents were synthesized via polymer substitute reaction. UV-visible spectra indicated that the aqueous solution of PNIPAm-g-PPP

exhibited the lower critical solution temperature (LCST). Also, the LCST was seriously influenced by the substitution ratios of PNIPAm to GlyEt in the copolymer. The more GlyEt the copolymer contained, the lower LCST it had.

The critical association concentration (CAC) of copolymers was determined by fluorescence

probe method. CAC was decreased with increasing GlyEt content of polyphosphazene. Also the formation of self-assembled micelles or

nano-particles was confirmed by TEM.

ST self assembly amphiphilic polyphosphazene; polyisopropylacrylamide  
polyphosphazene graft copolymer thermosensitive micelle

IT Critical solution temperature  
(lower; self-assembly behavior of amphiphilic grafted polyphosphazenes)

IT Micelles  
Nanoparticles  
Polymer morphology  
Self-assembly  
(self-assembly behavior of amphiphilic grafted polyphosphazenes)

IT Polyphosphazenes  
RL: PEP (Physical, engineering or chemical process); PNU (Preparation,  
unclassified); PRP (Properties); PYP (Physical process); PREP  
(Preparation); PROC (Process)  
(self-assembly behavior of amphiphilic grafted polyphosphazenes)

IT 459-73-4DP, reaction products with hexachlorocyclotriphosphazene-  
isopropylacrylamide graft copolymer 794574-57-5DP, reaction  
products with glycine Et ester  
RL: PEP (Physical, engineering or chemical process); PNU (Preparation,  
unclassified); PRP (Properties); PYP (Physical process); PREP  
(Preparation); PROC (Process)  
(self-assembly behavior of amphiphilic grafted polyphosphazenes)

RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE

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L9 ANSWER 4 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:75417 CAPLUS

DN 142:144371

ED Entered STN: 28 Jan 2005

TI Gas-barrier plastic laminates with good adhesion and durability, and  
displays having them

IN Watanabe, Takuzo

PA Toppan Printing Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM B32B009-04

ICS B32B027-00; H05B033-04; H05B033-14

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

Section cross-reference(s): 38

FAN.CNT 1

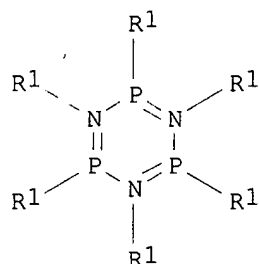
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005022375	A2	20050127	JP 2003-270610	20030703
PRAI	JP 2003-270610		20030703		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2005022375	ICM	B32B009-04
	ICS	B32B027-00; H05B033-04; H05B033-14
	IPCI	B32B0009-04 [ICM,7]; B32B0027-00 [ICS,7]; H05B0033-04

[ICS,7]; H05B0033-14 [ICS,7]  
 IPCR B32B0009-04 [I,A]; B32B0009-04 [I,C\*]; B32B0027-00  
 [I,A]; B32B0027-00 [I,C\*]; H05B0033-04 [I,A];  
 H05B0033-04 [I,C\*]; H05B0033-14 [I,A]; H05B0033-14  
 [I,C\*]  
 FTERM 3K007/AB12; 3K007/AB13; 3K007/AB15; 3K007/BB01;  
 3K007/CA06; 3K007/DB03; 3K007/FA02; 4F100/AA01B;  
 4F100/AA20; 4F100/AH07C; 4F100/AK42; 4F100/AT00A;  
 4F100/BA03; 4F100/BA04; 4F100/BA05; 4F100/BA10A;  
 4F100/BA10C; 4F100/EH66; 4F100/EJ24; 4F100/EJ24C;  
 4F100/EJ53; 4F100/JB14C; 4F100/JD02; 4F100/JJ02;  
 4F100/JK06; 4F100/JN01

OS MARPAT 142:144371  
 GI



I

AB The laminates, useful for electroluminescence (EL) displays, liquid crystal displays (LCD), etc., contain substrate layers, inorg. layers, and layers containing cyclophosphazene derivs. manufactured from I (R1 = radiation-reactive group). The radiation-reactive groups may be H2C:R2CO2(CH2)nO (R2 = H, Me; n = natural number).

ST gas barrier laminate acrylic polycyclophosphazene display

IT Polyphosphazenes  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (acrylic, cyclomatrix; gas-barrier plastic laminates with good adhesion and durability for displays)

IT Polyphosphazenes  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (cyclomatrix; gas-barrier plastic laminates with good adhesion and durability for displays)

IT Electroluminescent devices  
 (displays; gas-barrier plastic laminates with good adhesion and durability for displays)

IT Luminescent screens  
 (electroluminescent; gas-barrier plastic laminates with good adhesion and durability for displays)

IT Laminated plastic films  
 (gas-barrier plastic laminates with good adhesion and durability for displays)

IT Polyesters, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (substrate; gas-barrier plastic laminates with good adhesion and durability for displays)

IT 93891-06-6P, PPZ 827320-64-9P, Hexakis(methacryloyloxyethoxy)cyc lotriphosphazene-2-hydroxyethyl acrylate copolymer 827320-65-0P, Aronix M 220-hexakis(methacryloyloxyethoxy)cyclotriphosphazene copolymer  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(cyclomatrix; gas-barrier plastic laminates with good adhesion and durability for displays)

IT 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 50926-11-9, ITO  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (gas-barrier plastic laminates with good adhesion and durability for displays)

IT 25230-87-9  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (substrate, assumed monomers; gas-barrier plastic laminates with good adhesion and durability for displays)

IT 24968-11-4, PEN 25038-59-9, PET polymer, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (substrate; gas-barrier plastic laminates with good adhesion and durability for displays)

L9 ANSWER 5 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2004:793032 CAPLUS  
 DN 141:424682  
 ED Entered STN: 29 Sep 2004  
 TI Thermosensitive micelles self-assembled by novel N-isopropylacrylamide oligomer grafted polyphosphazene  
 AU Zhang, Jian Xiang; Qiu, Li Yan; Zhu, Kang Jie; Jin, Yi  
 CS College of Pharmaceutical Sciences, Zhejiang University, Hangzhou, 310031, Peop. Rep. China  
 SO Macromolecular Rapid Communications (2004), 25(17), 1563-1567  
 CODEN: MRCOE3; ISSN: 1022-1336  
 PB Wiley-VCH Verlag GmbH & Co. KGaA  
 DT Journal  
 LA English  
 CC 36-7 (Physical Properties of Synthetic High Polymers)  
 Section cross-reference(s): 35

AB A novel thermosensitive amphiphilic copolymer of poly(N-isopropylacrylamide) grafted polyphosphazene (PNIPAm-g-PPP) has been synthesized through a co-substitution reaction of poly(dichlorophosphazene) with amino-terminated NIPAm oligomer and glycine Et ester (GlyEt). The polymer obtained had a molar ratio of 1:5.25 PNIPAm to GlyEt and had a lower critical solution temperature (LCST) near 30°. The formation of polymeric micelles was confirmed by fluorescence, dynamic light scattering and transmission electron microscopy measurements.

ST polyisopropylacrylamide polyphosphazene graft copolymer thermosensitive micelle

IT Fluorescence  
 Hydrodynamic radius  
 Micelles  
 Polymer morphology  
 Polymerization  
 (preparation and properties of thermosensitive micelles self-assembled by isopropylacrylamide oligomer grafted polyphosphazene)

IT Polyphosphazenes  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and properties of thermosensitive micelles self-assembled by isopropylacrylamide oligomer grafted polyphosphazene)

IT 156-57-ODP, 2-Aminoethanethiol hydrochloride, reaction products with polyisopropylacrylamide 25189-55-3DP, Poly(N-isopropylacrylamide), reaction products with aminoethanethiol hydrochloride  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (intermediate; preparation and properties of thermosensitive micelles self-assembled by isopropylacrylamide oligomer grafted polyphosphazene)

IT 459-73-4DP, reaction products with hexachlorocyclotriphosphazene-isopropylacrylamide graft copolymer 794574-57-5DP, reaction products with glycine Et ester  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and properties of thermosensitive micelles self-assembled by isopropylacrylamide oligomer grafted polyphosphazene)

RE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE

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- (15) Lin, H; Macromolecules 2001, V34, P3710 CAPLUS
- (16) Liu, S; Curr Opin Colloid Interf Sci 2001, V6, P249 CAPLUS
- (17) Maeda, Y; Macromol Rapid Commun 2001, V22, P1390 CAPLUS
- (18) Qiu, L; J Appl Polym Sci 2000, V77, P2987 CAPLUS
- (19) Qiu, L; Polym Int 2000, V49, P1283 CAPLUS
- (20) Song, S; Macromolecules 1999, V32, P2188 CAPLUS
- (21) Takata, S; Polymer 2003, V44, P495 CAPLUS
- (22) Topp, M; Macromolecules 1997, V30, P8518 CAPLUS
- (23) Topp, M; Macromolecules 2000, V33, P4986 CAPLUS
- (24) Wilhelm, M; Macromolecules 1991, V24, P1033 CAPLUS

L9 ANSWER 6 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2004:631816 CAPLUS  
DN 141:141213  
ED Entered STN: 06 Aug 2004  
TI Three-dimensionally crosslinked resins and transparent molded products thereof  
IN Kawasaki, Noboru; Kogo, Osamu; Enya, Masahiro  
PA Mitsui Chemicals Inc., Japan  
SO Jpn. Kokai Tokkyo Koho, 20 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM C08F220-14  
ICS C08F220-18; C08F220-28; C08F220-36; C08F230-02; C08F290-06  
CC 37-3 (Plastics Manufacture and Processing)  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 2004217700	A2	20040805	JP 2003-3682	20030109
PRAI	JP 2003-3682		20030109		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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JP 2004217700	ICM	C08F220-14
	ICS	C08F220-18; C08F220-28; C08F220-36; C08F230-02; C08F290-06
	IPCI	C08F0220-14 [ICM,7]; C08F0220-18 [ICS,7]; C08F0220-28 [ICS,7]; C08F0220-36 [ICS,7]; C08F0220-00 [ICS,7,C*]; C08F0230-02 [ICS,7]; C08F0230-00 [ICS,7,C*]; C08F0290-06 [ICS,7]; C08F0290-00 [ICS,7,C*]
	IPCR	C08F0220-00 [I,C*]; C08F0220-14 [I,A]; C08F0220-18 [I,A]; C08F0220-28 [I,A]; C08F0220-36 [I,A]; C08F0230-00 [I,C*]; C08F0230-02 [I,A]; C08F0290-00 [I,C*]; C08F0290-06 [I,A]
	FTERM	4J027/AG03; 4J027/AG04; 4J027/AG14; 4J027/AG23; 4J027/AG24; 4J027/BA07; 4J027/CB03; 4J027/CC02; 4J027/CD01; 4J100/AL03P; 4J100/AL08T; 4J100/AL66Q; 4J100/AL66T; 4J100/AL67R; 4J100/AL74S; 4J100/BA02R;

4J100/BA02T; 4J100/BA04R; 4J100/BA34Q; 4J100/BA38S;  
 4J100/BC04Q; 4J100/BC04T; 4J100/BC07T; 4J100/BC26T;  
 4J100/BC43Q; 4J100/BC43S; 4J100/BC51R; 4J100/BC75R;  
 4J100/CA03; 4J100/CA04; 4J100/CA05; 4J100/CA06;  
 4J100/DA25; 4J100/DA28; 4J100/DA37; 4J100/DA49;  
 4J100/JA58

- AB Compns. comprising Me methacrylate, R1(OCNHQNHCO2-Pol)nOCNHQNHCO2R2 [R1, R2 = hydroxy (meth)acrylate residue; Q = residue of aliphatic, aromatic, or alicyclic diisocyanate; Pol = polyether diol or polyester diol residue; n = 1-5], and radical initiators are polymerized to give the resins with no runaway reaction. Thus, a mixture of 100 parts Me methacrylate and 40 parts of polyether-polyurethane acrylate (3:4:2 triethylene glycol-IPDI-2-hydroxyethyl acrylate condensate) was mixed with 0.2 part tert-Bu peroxy-2-ethylhexanoate and 0.1 part tert-Bu peroxy-3,5,5-trimethylhexanoate, poured in a space between glass sheets, and heated to 70-130° to give a transparent resin sheet showing Tg 115°, flexural modulus 3.2 GPa, H2O absorption 0.45%, no cracks at mold releasing, and good chemical resistance.
- ST polyether polyurethane acrylate methyl methacrylate polymer prepn
- IT Polyurethanes, preparation  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (acrylic-polyether-; three-dimensionally crosslinked Me methacrylate-polyurethane (meth)acrylate resins for transparent molded products)
- IT Polyesters, preparation  
 Polyethers, preparation  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (acrylic-polyurethane-; three-dimensionally crosslinked Me methacrylate-polyurethane (meth)acrylate resins for transparent molded products)
- IT Transparent materials  
 (three-dimensionally crosslinked Me methacrylate-polyurethane (meth)acrylate resins for transparent molded products)
- IT 2094-99-7, 3-Isopropenyl- $\alpha$ , $\alpha$ -dimethylbenzyl isocyanate  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction with hydroxy-containing methacrylate)
- IT 727704-32-7P, 2-Hydroxyethyl acrylate-isophorone diisocyanate-methyl methacrylate-triethylene glycol copolymer 727704-34-9P, 1,1,3,3,5,5-Hexakis(acryloylethylenedioxy)cyclotriphosphazene-2-hydroxyethyl methacrylate-methyl methacrylate-2,4-TDI-tripropylene glycol copolymer 727704-36-1P, Ethylene oxide-glycidol methacrylate-N-(3-isopropenyl- $\alpha$ , $\alpha$ -dimethylbenzyl)-1-methacryloyloxypropan-2-yl carbamate-methyl methacrylate-propylene oxide-2,4-TDI copolymer 727704-38-3P, Dimethyloltricyclodecane diacrylate-ethoxylated bisphenol A-hexamethylene diisocyanate-2-hydroxyethyl methacrylate-methyl methacrylate copolymer 727704-40-7P, Dibutylene glycol-dicyclopentanyl acrylate-2-hydroxyethyl acrylate-isophorone diisocyanate-N-(3-isopropenyl- $\alpha$ , $\alpha$ -dimethylbenzyl)-2-methacryloyloxyethyl carbamate-methyl methacrylate-tris[N-(2-acryloyloxyethyl)] isocyanurate copolymer 727704-42-9P, Adipic acid-ethylene glycol-1,6-hexanediol-isophorone diisocyanate-methyl methacrylate-pentaerythritol triacrylate copolymer 727704-44-1P, Ethylene glycol-1,1,3,3,5,5-hexakis(acryloylethylenedioxy)cyclotriphosphazene-1,6-hexanediol-2-hydroxypropyl acrylate-methylenebis(cyclohexyl isocyanate)-methyl methacrylate-terephthalic acid copolymer 727704-47-4P, Adipic acid-1,4-butanediol-ethylene glycol-2-hydroxypropyl acrylate-N-(3-isopropenyl- $\alpha$ , $\alpha$ -dimethylbenzyl)-1-methacryloyloxypropan-2-yl carbamate-methyl methacrylate-trimethylhexamethylene diisocyanate copolymer 727704-49-6P, Cyclohexyl methacrylate-ethylene glycol-1,6-hexanediol-2-hydroxyethyl methacrylate-isophthalic acid-methylenebis(cyclohexyl isocyanate)-methyl methacrylate copolymer 727704-51-0P, Adipic acid-ethylene glycol-1,6-hexanediol-2-hydroxyethyl acrylate-isobornyl methacrylate-isophorone diisocyanate-N-(3-isopropenyl-

$\alpha,\alpha$ -dimethylbenzyl)-2-methacryloyloxyethyl carbamate-methyl methacrylate-tris[N-(2-acryloyloxyethyl)] isocyanurate copolymer  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (three-dimensionally crosslinked Me methacrylate-polyurethane (meth)acrylate resins for transparent molded products)

IT 126710-00-7P 126710-08-5P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (three-dimensionally crosslinked Me methacrylate-polyurethane (meth)acrylate resins for transparent molded products)

L9 ANSWER 7 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2004:473452 CAPLUS  
 DN 141:44886  
 ED Entered STN: 11 Jun 2004  
 TI Photopolymer composition suitable for lithographic printing plates  
 IN Baumann, Harald; Flugel, Michael; Dwars, Udo; Glatt, Hans Horst  
 PA Kodak Polychrome Graphics GmbH, Germany  
 SO PCT Int. Appl., 32 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 IC ICM G03F007-027  
 CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004049069	A1	20040610	WO 2003-EP13432	20031128
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	DE 10255664	A1	20040708	DE 2002-10255664	20021128
	DE 10255664	B4	20060504		
	AU 2003292156	A1	20040618	AU 2003-292156	20031128
	EP 1565788	A1	20050824	EP 2003-767702	20031128
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	US 2006078819	A1	20060413	US 2005-536510	20050525
PRAI	DE 2002-10255664	A	20021128		
	WO 2003-EP13432	W	20031128		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2004049069	ICM	G03F007-027
	IPCI	G03F0007-027 [ICM,7]
	IPCR	G03F0007-027 [I,A]; G03F0007-027 [I,C*]
	ECLA	C08G018/67B2; C08G018/78B4F; G03F007/027
DE 10255664	IPCI	G03F0007-027 [I,A]; G03F0007-028 [I,A]
	IPCR	G03F0007-027 [I,A]; G03F0007-027 [I,C*]
	ECLA	C08G018/67B2; C08G018/78B4F; G03F007/027
AU 2003292156	IPCI	G03F0007-027 [ICM,7]
	IPCR	G03F0007-027 [I,A]; G03F0007-027 [I,C*]
EP 1565788	IPCI	G03F0007-027 [ICM,7]
	IPCR	G03F0007-027 [I,A]; G03F0007-027 [I,C*]
	ECLA	C08G018/67B2; C08G018/78B4F; G03F007/027
US 2006078819	IPCI	G03C0001-76 [I,A]

NCL 430/270.100

ECLA C08G018/67B2; C08G018/78B4F; G03F007/027

AB Radiation-sensitive elements are described whose radiation-sensitive coating comprises both a photopolymerizable oligomer with a biuret structural unit and a photopolymerizable phosphazene oligomer. The object of the present invention is to provide novel radiation-sensitive elements exhibiting improved properties compared to the ones known in the prior art, in particular high photosensitivity, high degree of thermal stability, high resolution in combination with good storage stability, and in the case of printing plates - yielding a large number of copies on the printing machine.

ST photopolymer compn lithog printing plate

IT Lithographic plates  
(photopolymer composition suitable for lithog. printing plates)

IT Polyvinyl acetals  
RL: TEM (Technical or engineered material use); USES (Uses)  
(photopolymer composition suitable for lithog. printing plates)

IT 32435-46-4, Kayamer PM-2  
RL: TEM (Technical or engineered material use); USES (Uses)  
(Kayamer PM-2; photopolymer composition suitable for lithog. printing plates)

IT 147-14-8, Copper phthalocyanine 7429-90-5, Aluminum, uses 25035-81-8, Methacrylic acid-methylmethacrylate-styrene copolymer 92832-53-6 115965-96-3, Airvol 203 185396-46-7, Desmodur N 100/2-hydroxyethyl acrylate/pentaerythritol triacrylate copolymer 701921-54-2, Desmodur N 100-pentaerythritol triacrylate copolymer  
RL: TEM (Technical or engineered material use); USES (Uses)  
(photopolymer composition suitable for lithog. printing plates)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Ciba Specialty Chemicals Holding Inc; WO 0068739 A 2000 CAPLUS

(2) Faust, R; US 4019972 A 1977 CAPLUS

(3) Idemitsu Petrochemical Co Ltd; EP 0557943 A 1993 CAPLUS

(4) Nichigo Morton Co Ltd; EP 0961171 A 1999 CAPLUS

L9 ANSWER 8 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:358950 CAPLUS

DN 139:135193

ED Entered STN: 12 May 2003

TI Synthesis of hexa(2-hydroxyethyl methacrylate) cyclotriphosphazene

AU Nie, Xu-Wen; Cui, Yan-Jun; Tang, Xiao-Zhen

CS School of Chemistry and Chemical Technology, Shanghai Jiaotong University, Shanghai, 200240, Peop. Rep. China

SO Yingyong Huaxue (2003), 20(4), 385-387  
CODEN: YIHUED; ISSN: 1000-0518

PB Yingyong Huaxue Bianji Weiyuanhui

DT Journal

LA Chinese

CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)

OS CASREACT 139:135193

AB Hexa(2-hydroxyethyl methacrylate)cyclotriphosphazene(HHMP) was synthesized from 2-hydroxyethyl methacrylate and hexachlorocyclotriphosphazene through nucleophilic substitution-reaction in the presence of cuprous chloride as a catalyst. Raman, FTIR and NMR techniques were used to characterize and confirm the structure of the product.

ST hexachlorocyclotriphosphazene hydroxyethyl methacrylate synthesis hexakismethacryloyloxyethoxycyclotriphosphazene

IT 868-77-9, 2-Hydroxyethyl methacrylate  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(in reaction with hexachlorocyclotriphosphazene)

IT 940-71-6P, Hexachlorocyclotriphosphazene  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(intermediate; preparation of, and reaction with hydroxyethyl methacrylate)

IT 10026-13-8, Phosphorus pentachloride



RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction with ammonium chloride in preparation of  
 hexachlorocyclotriphosphazene)  
 IT 12125-02-9, Ammonium chloride, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction with phosphorus pentachloride in preparation of  
 hexachlorocyclotriphosphazene)  
 IT 92832-53-6P, Hexakis(methacryloyloxyethoxy)cyclotriphosphazene  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (synthesis, of)

L9 ANSWER 9 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2003:289667 CAPLUS  
 DN 139:85871  
 ED Entered STN: 15 Apr 2003  
 TI Fluorescence behavior of water-soluble copolymers with pendant  
 (4-carboxylatophenoxy)cyclotriphosphazene/europium ion complexes  
 AU Itaya, Tomoyuki; Honda, Tetsuji; Kusumoto, Noriyuki; Matsumoto, Akira;  
 Inoue, Kenzo  
 CS Chemical Laboratory, Nagano National College of Technology, Nagano,  
 381-8550, Japan  
 SO Polymer (2003), 44(10), 2927-2932  
 CODEN: POLMAG; ISSN: 0032-3861  
 PB Elsevier Science Ltd.  
 DT Journal  
 LA English  
 CC 36-5 (Physical Properties of Synthetic High Polymers)  
 AB The water-soluble copolymers composed of styrene derivative with  
 (4-carboxylatophenoxy)cyclotriphosphazene (CCP) and N-isopropylacrylamide  
 (NIPAM) have been prepared as host polymers of Eu<sup>3+</sup> ion. When CCP units  
 were excited at 260 nm, the characteristic fluorescence of Eu<sup>3+</sup> was  
 remarkably enhanced compared to that of the excitation of Eu<sup>3+</sup> at 396 nm,  
 suggesting occurrence of efficient energy transfer from CCP units to Eu<sup>3+</sup>  
 ion. The content of CCP units in the polymer chains significantly  
 affected the fluorescence behaviors; for the copolymer with 1.7 mol% CCP  
 unit (6a) the intensity increased with increasing of Eu<sup>3+</sup> ion and reached  
 a limiting value at [Eu<sup>3+</sup>]/[CCP unit] = 1.0, whereas the fluorescence  
 intensity of the copolymer with 12.4 mol% CCP unit (6d) reached a maximum at  
 [Eu<sup>3+</sup>]/[CCP unit] = 0.25, decreased by the further addition of Eu<sup>3+</sup>, and then  
 has a constant value. In the 6d-Eu<sup>3+</sup> complexes, the number of water mols.  
 coordinated with Eu<sup>3+</sup> ions, which act as a quencher, varies from 2.8 at  
 [Eu<sup>3+</sup>]/[CCP unit] = 0.25 to 4.1 at [Eu<sup>3+</sup>]/[CCP unit] = 1.5. The reduced  
 viscosity of 6d decreased with increasing the concentration of Eu<sup>3+</sup> ions,  
 indicating the contraction of polymer chains. The environment of Eu<sup>3+</sup>  
 bound to the copolymer is not affected by the coil-globule transition of  
 the copolymer chain, although the 6a-Eu<sup>3+</sup> system showed a lower critical  
 solution temperature at 38°. The fluorescence behaviors of Eu<sup>3+</sup> trapped by  
 new host polymers based on cyclotriphosphazene are described.  
 ST carboxylatophenoxy cyclotriphosphazene styrene deriv isopropylacrylamide  
 copolymer europium complex fluorescence  
 IT Complexation  
 Fluorescence  
 Optical absorption  
 Viscosity  
 (preparation and fluorescence behavior of water-soluble copolymers with  
 pendant  
 (4-carboxylatophenoxy)cyclotriphosphazene/europium ion complexes)

IT 552890-89-8P, 2,4,4,6,6-Pentakis(4-Ethoxycarbonylphenoxy)-2-(4-  
 vinylphenoxy)cyclotriphosphazene  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (monomer; preparation and fluorescence behavior of water-soluble copolymers  
 with pendant (4-carboxylatophenoxy)cyclotriphosphazene/europium ion  
 complexes)

IT 552890-89-8D, 2,4,4,6,6-Pentakis(4-Ethoxycarbonylphenoxy)-2-(4-

vinylphenoxy)cyclotriphosphazene, hydrolyzed, complexes with europium  
RL: PRP (Properties)

(preparation and fluorescence behavior of water-soluble copolymers with pendant

(4-carboxylatophenoxy)cyclotriphosphazene/europium ion complexes)

IT 7440-53-1DP, Europium, complexes with 2,4,4,6,6-pentakis(4-ethoxycarbonylphenoxy)-2-(4-vinylphenoxy)cyclotriphosphazene-N-isopropylacrylamide copolymer 552890-90-1DP, 2,4,4,6,6-Pentakis(4-Ethoxycarbonylphenoxy)-2-(4-vinylphenoxy)cyclotriphosphazene-N-isopropylacrylamide copolymer, hydrolyzed, potassium salts 552890-90-1DP, 2,4,4,6,6-Pentakis(4-Ethoxycarbonylphenoxy)-2-(4-vinylphenoxy)cyclotriphosphazene-N-isopropylacrylamide copolymer, hydrolyzed, potassium salts, complexes with europium

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(preparation and fluorescence behavior of water-soluble copolymers with pendant

(4-carboxylatophenoxy)cyclotriphosphazene/europium ion complexes)

IT 120-47-8, Ethyl 4-hydroxybenzoate 136144-85-9, 2-(4-Vinylphenoxy)pentachlorocyclotriphosphazene

RL: RCT (Reactant); RACT (Reactant or reagent)

(starting material; preparation and fluorescence behavior of water-soluble copolymers with pendant (4-carboxylatophenoxy)cyclotriphosphazene/europium ion complexes)

RE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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- (2) Feil, H; Macromolecules 1993, V26, P2496 CAPLUS
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- (5) Horrocks, W; J Am Chem Soc 1977, V99, P2378
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- (8) Inoue, K; J Am Chem Soc 1991, V113, P7609 CAPLUS
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- (10) Itaya, T; Chem Lett 1996, P305 CAPLUS
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- (20) Taylor, L; J Polym Sci 1975, V13, P2551 CAPLUS
- (21) Ulrich, G; Tetrahedron Lett 1994, V34, P6292
- (22) Wang, L; Chem Mater 2000, V12, P2212 CAPLUS
- (23) Winnik, F; Macromolecules 1990, V23, P335
- (24) Zhu, L; J Phys Chem B 2001, V105, P2461 CAPLUS

L9 ANSWER 10 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:483938 CAPLUS

DN 137:202669

ED Entered STN: 27 Jun 2002

TI Curing and combustion properties of a PU-coating system with UV-reactive phosphazene

AU Huang, Woei-Kae; Chen, Kwei-Ju; Yeh, Jen-Taut; Chen, Kan-Nan

CS Department of Chemistry, Tamkang University, Tamsui, 251, Taiwan

SO Journal of Applied Polymer Science (2002), 85(9), 1980-1991

CODEN: JAPNAB; ISSN: 0021-8995

PB John Wiley & Sons, Inc.

DT Journal

LA English

CC 42-3 (Coatings, Inks, and Related Products)

AB A UV-curable polyurethane (PU)-coating system containing phosphorus is formulated by the combination of photoinitiator, PU acrylate oligomer, and UV-reactive phosphazene monomer. PU acrylate oligomer is prepared by the addition of 2-hydroxyethyl methacrylate (HEMA) to NCO-terminated PU prepolymer. UV-reactive phosphazene monomer is derived from the HEMA substitution reaction to hexachlorocyclotriphosphazene (NPCl<sub>2</sub>)<sub>3</sub>. The curing reaction of this PU-coating system is carried out by UV irradiation. The resultant UV-cured PU-coated films demonstrated better performance properties than those of original UV-cured PU acrylate (UV-PU) without UV-reactive phosphazene monomer. Furthermore, their thermal properties are investigated by a thermogravimetric analyzer and a dynamic mechanical analyzer, resp. The combustion behaviors of these UV-cured PU-coated films are evaluated by the measurements of a limiting oxygen index and a cone calorimeter.

ST polyurethane acrylate hexachlorocyclotriphosphazene curing UV irradiation; combustion polyurethane acrylate hexachlorocyclotriphosphazene UV curable coating

IT Coating materials  
(UV-curable; curing and combustion properties of polyurethane coating system with UV-reactive phosphazene)

IT Bending strength  
Combustion  
Elongation, mechanical  
Flammability  
Mechanical loss  
Storage modulus  
Stress-strain relationship  
Tensile strength  
(curing and properties of polyurethane coating system with UV-reactive phosphazene)

IT Crosslinking  
(photochem.; curing and combustion properties of polyurethane coating system with UV-reactive phosphazene)

IT Polyurethanes, uses  
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)  
(polyoxyalkylene-, acrylate-terminated, crosslinked; curing and combustion properties of polyurethane coating system with UV-reactive phosphazene)

IT 868-77-9DP, 2-Hydroxyethyl methacrylate, reaction products with IPDI-polypropylene glycol copolymer, polymers with phosphazene derivs.  
39323-37-ODP, IPDI-polypropylene glycol copolymer, reaction products with hydroxyethyl methacrylate, polymers with phosphazene derivs.  
92832-53-6DP, polymers with polyurethane acrylate  
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)  
(curing and combustion properties of polyurethane coating system with UV-reactive phosphazene)

IT 92832-53-6P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(monomer; curing and combustion properties of polyurethane coating system with UV-reactive phosphazene)

IT 868-77-9, 2-Hydroxyethyl methacrylate 940-71-6, Hexachlorocyclotriphosphazene  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(starting material; curing and combustion properties of polyurethane coating system with UV-reactive phosphazene)

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Banks, M; Polymer 1994, V35, P3470 CAPLUS
- (2) Chen, G; J Appl Polym Sci 1997, V63, P1609 CAPLUS
- (3) Chen, G; J Appl Polym Sci 1998, V67, P1661 CAPLUS

- (4) Chen, G; J Polym Res 1997, V4, P165 CAPLUS
- (5) Cheng, T; Polym Degrad Stab 1995, V47, P375
- (6) Green, J; Thermoplastic Polymer Additives 1989, P93 MEDLINE
- (7) Hilado, C; Flammability Handbook for Plastics, 4th ed 1990, P167
- (8) Huang, W; J Appl Polym Sci 2001, V79, P662 CAPLUS
- (9) Liu, Y; J Appl Polym Sci 1997, V63, P895 CAPLUS
- (10) Paul, S; Surface Coatings--Science and Technology 1985, P601
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- (12) Shao, C; J Polym Res 2000, V7, P41 CAPLUS
- (13) Shao, C; Polym Degrad Stab 1999, V65, P359 CAPLUS
- (14) Troev, K; Eur Polym J 1993, V29, P1211 CAPLUS
- (15) Wang, T; J Appl Polym Sci 1999, V74, P2499 CAPLUS
- (16) Yeh, J; Polym Degrad Stab 1998, V61, P339

L9 ANSWER 11 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:313388 CAPLUS

DN 136:334101

ED Entered STN: 26 Apr 2002

TI Magnetic recording media

IN Hashimoto, Hiroshi; Murayama, Yuichiro

PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G11B005-702

ICS C09D004-00; C09D005-23; C09D201-00

CC 77-8 (Magnetic Phenomena)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002123922	A2	20020426	JP 2000-311455	20001012
PRAI	JP 2000-311455		20001012		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002123922	ICM	G11B005-702
	ICS	C09D004-00; C09D005-23; C09D201-00
	IPCI	G11B0005-702 [ICM,7]; C09D0004-00 [ICS,7]; C09D0005-23 [ICS,7]; C09D0201-00 [ICS,7]
	IPCR	C09D0004-00 [I,A]; C09D0004-00 [I,C*]; C09D0005-23 [I,A]; C09D0005-23 [I,C*]; C09D0201-00 [I,A]; C09D0201-00 [I,C*]; G11B0005-702 [I,A]; G11B0005-702 [I,C*]

AB The binders contained in the magnetic layers of the recording media are compds. which have mol. weight of 200-1000, N-containing complex rings, and  $\geq 3$  radiation-hardening functional groups. The binders are hardened by radiation application, and the compds. are used 5-30 for ferromagnetic powders 100 weight parts. The magnetic recording media have high durability, and excellent electromagnetic conversion characteristic.

ST magnetic recording media binder radiation hardening

IT Binders

Hardening (mechanical)

Magnetic recording materials

Radiation

(radiation-hardening compds. for magnetic recording media)

IT 40220-08-4 73046-84-1 92832-53-6 414909-22-1 414909-23-2

RL: DEV (Device component use); USES (Uses)

(radiation-hardening compds. for magnetic recording media)

L9 ANSWER 12 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2000:837063 CAPLUS

DN 134:23457

ED Entered STN: 30 Nov 2000

TI Electrophotographic photoreceptor in process cartridge for

electrophotographic image-forming apparatus

IN Uematsu, Hironori; Maruyama, Akio; Sekiya, Michiyo; Amanomiya, Shoji  
PA Canon Inc., Japan  
SO Jpn. Kokai Tokkyo Koho, 14 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese  
IC ICM G03G005-147  
ICS G03G005-147

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000330314	A2	20001130	JP 1999-138664	19990519
PRAI	JP 1999-138664		19990519		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2000330314	ICM	G03G005-147
	ICS	G03G005-147
	IPCI	G03G0005-147 [ICM,7]; G03G0005-147 [ICS,7]
	IPCR	G03G0005-147 [I,A]; G03G0005-147 [I,C*]

AB The title photoreceptor has a light-conducting layer and a protecting  
layer on a conductive support, wherein the protecting layer contains a  
binder resin and dispersed fine particles made of a surface-treated metal  
oxide. The protecting layer is formed by treating the surface with a  
silane having 2-3 functional groups and by treating the surface with a  
chlorosilane having a functional group. The photoreceptor has the  
improved surface characteristics such as durability, smoothness.

ST electrophotog photoreceptor protecting layer

IT Electrophotographic apparatus  
Electrophotographic photoconductors (photoreceptors)  
(electrophotog. photoreceptor in process cartridge for electrophotog.  
image-forming apparatus)

IT 40220-08-4 92832-53-6  
RL: TEM (Technical or engineered material use); USES (Uses)  
(light-curable acrylic monomer in protecting layer)

IT 1067-33-0, T 1  
RL: TEM (Technical or engineered material use); USES (Uses)  
(metal oxide fine particles in protecting layer)

IT 75-77-4, Chlorotrimethylsilane, uses 75-79-6, Methyltrichlorosilane  
768-33-2, Chloro(dimethyl)phenylsilane 999-97-3 1185-55-3,  
Methyltrimethoxysilane 1825-61-2, Methoxytrimethylsilane 1825-62-3,  
Ethoxytrimethylsilane 18297-63-7 85712-15-8,  
Dimethoxy(methyl)octylsilane  
RL: TEM (Technical or engineered material use); USES (Uses)  
(silane compound in protecting layer)

L9 ANSWER 13 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2000:814742 CAPLUS  
DN 133:367840  
ED Entered STN: 21 Nov 2000  
TI Photosensitive composition  
IN Setiabudi, Frans  
PA Ciba Specialty Chemicals Holding Inc., Switz.  
SO PCT Int. Appl., 23 pp.  
CODEN: PIXXD2

DT Patent  
LA English  
IC ICM G03F007-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 38, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000068739	A1	20001116	WO 2000-EP4009	20000504
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	CA 2369025	AA	20001116	CA 2000-2369025	20000504
	EP 1177478	A1	20020206	EP 2000-931115	20000504
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2002544542	T2	20021224	JP 2000-616465	20000504
PRAI	CH 1999-899	A	19990511		
	WO 2000-EP4009	W	20000504		

# CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2000068739	ICM	G03F007-027
	IPCI	G03F0007-027 [ICM,7]
	IPCR	G03F0007-027 [I,A]; G03F0007-027 [I,C*]; H05K0003-28 [N,A]; H05K0003-28 [N,C*]
	ECLA	G03F007/027
CA 2369025	IPCI	G03F0007-027 [ICM,7]
EP 1177478	IPCI	G03F0007-027 [ICM,6]
	IPCR	G03F0007-027 [I,A]; G03F0007-027 [I,C*]; H05K0003-28 [N,A]; H05K0003-28 [N,C*]
JP 2002544542	IPCI	G03F0007-027 [ICM,7]; G03F0007-027 [ICS,7]; C08F0290-00 [ICS,7]; C08G0079-04 [ICS,7]; C08G0079-00 [ICS,7,C*]; H05K0003-28 [ICS,7]
	IPCR	G03F0007-027 [I,A]; G03F0007-027 [I,C*]; H05K0003-28 [N,A]; H05K0003-28 [N,C*]

AB A photosensitive polymerizable composition comprises at least one cyclic and/or oligomeric compound composed of structural units of formula  $[N=P(OR)_2]_n$  ( $R = -(A)-O-C(O)-C(R_1)=CH_2$ ;  $R_1 = H, Me$ ;  $A =$  transition group; and  $n = 3-18$ ), and the use of this composition as photostructurable solder stopping resist for the production of solder masks for printed circuit boards.

ST photosensitive compn solder resist photoresist

IT Photoresists

Solder resists

(photosensitive composition for resists)

IT 92832-53-6 306971-23-3, Ethoxylated trimethylolpropane triacrylate-tris(2-hydroxyethyl) isocyanurate triacrylate copolymer

RL: TEM (Technical or engineered material use); USES (Uses)

(photosensitive composition for resists)

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Canon Kabushiki Kaisha; EP 0464749 A 1992 CAPLUS

(2) Fujitsu Limited; EP 0453237 A 1991 CAPLUS

(3) Nippon Kayaku Kk; JP 06228253 A 1994 CAPLUS

L9 ANSWER 14 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2000:392898 CAPLUS

DN 133:18892

ED Entered STN: 14 Jun 2000

TI Functional coat films with long service life, articles bearing the films and method for their manufacture

IN Higuchi, Yoshiki; Harada, Eiji; Nojima, Takayuki; Omura, Hiroshi

PA Nippon Oil and Fats Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DT Patent  
 LA Japanese  
 IC ICM B32B027-00  
 ICS C08J007-04  
 CC 42-10 (Coatings, Inks, and Related Products)  
 Section cross-reference(s): 38

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000158594	A2	20000613	JP 1998-333822	19981125
PRAI	JP 1998-333822		19981125		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2000158594	ICM	B32B027-00
	ICS	C08J007-04
	IPCI	B32B0027-00 [ICM,7]; C08J0007-04 [ICS,7]
	IPCR	B32B0027-00 [I,A]; B32B0027-00 [I,C*]; C08J0007-00 [I,C*]; C08J0007-04 [I,A]

AB The films are coated on a substrate as an under layer and a top layer which is chemical bonded to the under layer by 3,3',4,4'-tetra(tert-butylperoxycarbonyl)benzophenone (I) compound where the under layer is derived from radical-polymerizable monomers and the top layer is derived from functional monomers. Thus, coating a mixture of I 0.5, PPZ (phosphazene methacrylate derivative) 1.5 and propylene glycol monomethyl ether 98% on the surface of an acrylic resin panel to dry thickness of 0.5 µm, drying, irradiating with UV light, coating on top with a mixture of N,N-dimethylacrylamide 20 and water 80% and irradiating with UV light gave a coated panel with a transparent film having pencil hardness 2H and good adhesion and resistance to fogging.

ST antifogging coating reactive multilayer acrylic polymer; plastic molding reactive multilayer acrylic polymer coating; butylperoxycarbonyl benzophenone deriv reactive multilayer acrylic polymer coating

IT Acrylic polymers, miscellaneous  
 Polycarbonates, miscellaneous  
 Polyesters, miscellaneous  
 RL: MSC (Miscellaneous)

(substrate; functional coat films with long service life, articles bearing films and method for manufacture)

IT 272119-32-1P, N,N-Dimethylacrylamide-hexakis(methacryloyloxyethoxy)cyclotriphosphazene copolymer 272119-33-2P, Sodium 2-acrylamido-2-methylpropanesulfonate-Hexakis(methacryloyloxyethoxy)cyclotriphosphazene copolymer 272119-34-3P, KBM 503-NK Ester A 600-hexakis(methacryloyloxyethoxy)cyclotriphosphazene-sodium methacrylate-trimethylolpropane triacrylate copolymer 272119-35-4P, Blemmer QA-trimethylolpropane triacrylate copolymer 272119-36-5P, KBM 503-2-(perfluorohexyl)ethyl acrylate-Hexakis(methacryloyloxyethoxy)cyclotriphosphazene copolymer 272119-37-6P, Hexakis(methacryloyloxyethoxy)cyclotriphosphazene-KBM 503-sodium 2-acrylamido-2-methylpropanesulfonate copolymer 272119-38-7P, NK Ester A 600-N,N-dimethylacrylamide-hexakis(methacryloyloxyethoxy)cyclotriphosphazene-trimethylolpropane triacrylate copolymer 273221-38-8P, Hexakis(methacryloyloxyethoxy)cyclotriphosphazene-trioctyl(4-vinylbenzyl)phosphonium chloride) copolymer  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(functional coat films with long service life, articles bearing films and method for manufacture)

IT 77473-08-6, 3,3',4,4'-Tetra(tert-butylperoxycarbonyl)benzophenone  
 RL: CAT (Catalyst use); USES (Uses)

(polymerization initiator; functional coat films with long service life, articles bearing films and method for manufacture)

IT 25038-59-9, PET polyester, miscellaneous  
 RL: MSC (Miscellaneous)

(substrate; functional coat films with long service life, articles

bearing films and method for manufacture)

L9 ANSWER 15 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2000:219074 CAPLUS  
DN 132:271662  
ED Entered STN: 05 Apr 2000  
TI Photosensitive, heat-resistant resin composition for forming patterns  
IN Tani, Motoaki; Horikoshi, Eiji; Watanabe, Isao; Miyahara, Shoichi; Ito, Takashi; Sasaki, Makoto  
PA Fujitsu Ltd., Japan  
SO U.S., 19 pp., Cont.-in-part of U.S. Ser. No. 684,271, abandoned.  
CODEN: USXXAM  
DT Patent  
LA English  
IC ICM G03C001-73  
INCL 430285100  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6045975	A	20000404	US 1993-64664	19930521
	JP 04018450	A2	19920122	JP 1990-279088	19901019
	JP 2980359	B2	19991122		
	JP 05323625	A2	19931207	JP 1992-130837	19920522
	JP 2911298	B2	19990623		
	US 6013419	A	20000111	US 1995-418169	19950406
	US 5972807	A	19991026	US 1996-772260	19961223
PRAI	JP 1990-99788	A	19900416		
	JP 1990-279088	A	19901019		
	US 1991-684271	B2	19910412		
	JP 1992-130837	A	19920522		
	US 1993-64664	A3	19930521		
	JP 1993-248499	A	19930910		
	US 1993-155697	B1	19931123		
	US 1994-303931	B1	19940909		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 6045975	ICM	G03C001-73
	INCL	430285100
	IPCI	G03C0001-73 [ICM,7]
	IPCR	G03F0007-032 [I,C*]; G03F0007-037 [I,A]; H05K0001-00 [I,A]; H05K0001-00 [I,C*]; H05K0003-00 [I,A]; H05K0003-00 [I,C*]; H05K0003-38 [N,A]; H05K0003-38 [N,C*]; H05K0003-46 [N,A]; H05K0003-46 [N,C*]
	NCL	430/285.100; 430/287.100; 430/288.100; 430/906.000; 430/920.000; 430/925.000
	ECLA	G03F007/037; H05K001/00B2; H05K003/00K3F
JP 04018450	IPCI	C08L0079-08 [ICM,5]; C08L0079-00 [ICM,5,C*]; C08G0073-10 [ICS,5]; C08G0073-00 [ICS,5,C*]; C09D0004-02 [ICS,5]; C09D0179-08 [ICS,5]; C09D0179-00 [ICS,5,C*]
JP 05323625	IPCI	G03G0005-05 [ICM,5]
US 6013419	IPCI	G03C0005-16 [ICM,6]
	IPCR	G03F0007-032 [I,C*]; G03F0007-037 [I,A]; H05K0003-00 [N,A]; H05K0003-00 [N,C*]; H05K0003-38 [N,A]; H05K0003-38 [N,C*]; H05K0003-46 [N,A]; H05K0003-46 [N,C*]
	NCL	430/325.000; 430/311.000; 430/330.000
	ECLA	G03F007/037
US 5972807	IPCI	C08G0073-10 [ICM,6]; C08G0073-00 [ICM,6,C*]; C08L0079-08 [ICS,6]; C08L0079-00 [ICS,6,C*]
	IPCR	H05K0001-00 [I,A]; H05K0001-00 [I,C*]; H05K0003-00 [N,A]; H05K0003-00 [N,C*]; H05K0003-38 [N,A];



H05K0003-38 [N,C\*]; H05K0003-46 [N,A]; H05K0003-46  
[N,C\*]

NCL 442/063.000; 442/069.000; 442/070.000; 442/164.000;  
525/180.000; 525/183.000

ECLA H05K001/00B2

AB A film-forming, photosensitive, heat-resistant resin composition comprises a varnish of a polyimide precursor having no photosensitivity in itself, a polymerizable monomer or oligomer compatible with the varnish and capable of providing a high-heat-resistant polymer upon being polymerized, and a polymerization initiator for the monomer or oligomer. The resin composition is useful

for the production of circuit substrates and semiconductor devices for high-d. mounting including multi-chip modules or the like, such as printed circuits, printed boards, wiring boards, and electronic components, since it can effectively avoid a reduction of the layer thickness during the film formation, and ensures a low cost production process. The pattern formation process using the resin composition is also disclosed.

ST photosensitive heat resistant resin compn printed circuit board

IT Photoimaging materials

(containing polyimide precursor varnishes for forming heat-resistant patterns)

IT Soldering

(masks; photosensitive compns. containing polyimide precursor varnishes for preparation of)

IT Polyamic acids

RL: TEM (Technical or engineered material use); USES (Uses)

(photosensitive compns. for forming heat-resistant images containing)

IT Printed circuit boards

(photosensitive compns. for forming heat-resistant images for fabrication of)

IT 25038-81-7

RL: TEM (Technical or engineered material use); USES (Uses)

(photosensitive compns. for forming heat-resistant images containing photopolymerizable compds. and)

IT 106-90-1, Glycidyl acrylate 3524-68-3 15625-89-5, Trimethylolpropane triacrylate 29570-58-9, Dipentaerythritol hexaacrylate 40220-08-4, Tris(acryloyloxyethyl)isocyanurate 92832-53-6 100844-79-9 137741-82-3 251636-01-8 263169-76-2 263169-78-4

RL: TEM (Technical or engineered material use); USES (Uses)

(photosensitive compns. for forming heat-resistant images containing polyimide precursors and)

IT 94-36-0, Benzoyl peroxide, uses 103-01-5, N-Phenylglycine 119-61-9, Benzophenone, uses 2040-14-4 6542-67-2, 2,4,6-Tris(trichloromethyl)-1,3,5-triazine 6652-28-4, Isopropyl benzoin ether 7189-82-4, 2,2'-Bis(o-chlorophenyl)-4,4',5,5'-tetraphenyl-1,2'-diimidazole 15774-82-0, 2-Methylthioxanthone 24504-22-1 24650-42-8 77473-08-6, 3,3',4,4'-Tetra(tert-butylperoxycarbonyl)benzophenone

RL: TEM (Technical or engineered material use); USES (Uses)

(photosensitive compns. for forming heat-resistant images containing polyimide precursors, photopolymerizable compds. and)

RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Aldag; US 4962011 1990 CAPLUS
- (2) Anon; DE 2914619 1979 CAPLUS
- (3) Anon; JP 63-175854 1988 CAPLUS
- (4) Anon; JP 63-175854 1988, V12(453) CAPLUS
- (5) Anon; JP 11-05241 1989 CAPLUS
- (6) Anon; JP 48-8021 1992
- (7) Anon; Hawley's Condensed Chemical Dictionary 1977, P699
- (8) Anon; JP 54-162798 World Patents Index 1979 CAPLUS
- (9) Cescon; US 3615454 1971 CAPLUS
- (10) Furno; US 4987188 1991 CAPLUS
- (11) Giles Jr; US 4395518 1983 CAPLUS
- (12) Goff; US 4416973 1983 CAPLUS
- (13) Goff; US 4430418 1984 CAPLUS

(14) Goff; US 4454220 1984 CAPLUS  
 (15) Hiramoto; US 4243743 1981 CAPLUS  
 (16) Horikoshi; ICEMM Proceedings 1993, P266  
 (17) Ide; US 4048035 1977  
 (18) Ide; US 4537855 1985 CAPLUS  
 (19) Irving; US 4579809 1986 CAPLUS  
 (20) Kataoka; US 4565767 1986 CAPLUS  
 (21) Kogyo Chosakai Publishing Co; Photopolymer Handbook 1989, P270  
 (22) Nagata; US 5438105 1995 CAPLUS  
 (23) St Clair; US 4389504 1983 CAPLUS  
 (24) Tani; US 08418169 1995  
 (25) Tani; US 08772260 1996  
 (26) Tani; Mat Res Soc Symp Proc 1992, V264, P37 CAPLUS  
 (27) Yoda and Hiramoto; J Macromol SCI-CHEM 1984, P1641

L9 ANSWER 16 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2000:53791 CAPLUS  
 DN 132:109482  
 ED Entered STN: 23 Jan 2000  
 TI Weather-resistant compositions and coating materials and molded articles  
 IN Ogawa, Takashi; Mori, Koji; Akada, Mitsuo  
 PA Otsuka Chemical Co., Ltd., Japan  
 SO PCT Int. Appl., 58 pp.  
 CODEN: PIXXD2

DT Patent  
 LA Japanese  
 IC ICM C09D004-02  
 ICS C08K005-3475; C08L033-04; C09D007-12; C07D249-20; C09K003-00  
 CC 42-10 (Coatings, Inks, and Related Products)  
 Section cross-reference(s): 55

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000002964	A1	20000120	WO 1999-JP3715	19990708
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	AU 9946504	A1	20000201	AU 1999-46504	19990708
	EP 1104790	A1	20010606	EP 1999-929769	19990708
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	US 6703139	B1	20040309	US 2001-720974	20010103
PRAI	JP 1998-196099	A	19980710		
	WO 1999-JP3715	W	19990708		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2000002964	ICM	C09D004-02
	ICS	C08K005-3475; C08L033-04; C09D007-12; C07D249-20; C09K003-00
	IPCI	C09D0004-02 [ICM,6]; C08K0005-3475 [ICS,6]; C08K0005-00 [ICS,6,C*]; C08L0033-04 [ICS,6]; C08L0033-00 [ICS,6,C*]; C09D0007-12 [ICS,6]; C07D0249-20 [ICS,6]; C07D0249-00 [ICS,6,C*]; C09K0003-00 [ICS,6]
	IPCR	C08K0005-00 [I,C*]; C08K0005-3475 [I,A]; C09D0007-12 [I,A]; C09D0007-12 [I,C*]
	ECLA	C08K005/3475; C09D007/12D4A; C09D007/12D4
AU 9946504	IPCR	C08K0005-00 [I,C*]; C08K0005-3475 [I,A]; C09D0007-12 [I,A]; C09D0007-12 [I,C*]

EP 1104790 IPCI C09D0004-02 [ICM,6]; C08K0005-3475 [ICS,6]; C08K0005-00 [ICS,6,C\*]; C08L0033-04 [ICS,6]; C08L0033-00 [ICS,6,C\*]; C09D0007-12 [ICS,6]; C07D0249-20 [ICS,6]; C07D0249-00 [ICS,6,C\*]; C09K0003-00 [ICS,6]

IPCR C08K0005-00 [I,C\*]; C08K0005-3475 [I,A]; C09D0007-12 [I,A]; C09D0007-12 [I,C\*]

ECLA C08K005/3475; C09D007/12D4A; C09D007/12D4

US 6703139 IPCI B32B0027-00 [ICM,7]; C08F0126-06 [ICS,7]; C08F0126-00 [ICS,7,C\*]; C08F0112-14 [ICS,7]; C08F0112-00 [ICS,7,C\*]; C08F0220-10 [ICS,7]; C08F0220-00 [ICS,7,C\*]; C08F0216-12 [ICS,7]; C08F0216-00 [ICS,7,C\*]

IPCR C08K0005-00 [I,C\*]; C08K0005-3475 [I,A]; C09D0007-12 [I,A]; C09D0007-12 [I,C\*]

NCL 428/500.000; 526/261.000; 526/313.000; 526/328.500; 526/332.000

ECLA C08K005/3475; C09D007/12D4A; C09D007/12D4

OS MARPAT 132:109482

AB The title compns. contain the reaction products of bisbenzotriazolylphenols with lactones, (meth)acrylates, and curing agents. Thus, a coating composition contained Aronix M 8030 40, tetrahydrofurfuryl acrylate 20, trimethylolpropane triacrylate 40, ε-caprolactone-2,2'-methylenebis[6-(2H-1,2,3-benzotriazole-2-yl)-4-(2-hydroxyethyl)phenol] copolymer 3, and Darocur 1173 3 parts.

ST weather resistant coating UV absorber; benzotriazolylhydroxyethylphenol lactone copolymer UV absorber; polyester benzotriazolylhydroxyethylphenol caprolactone UV absorber

IT Coating materials  
(abrasion-resistant; weather-resistant coating materials and moldings containing bisbenzotriazolylhydroxyethylphenol lactone copolymers)

IT Polymerization catalysts  
(photopolymer.; weather-resistant coating materials and moldings containing bisbenzotriazolylhydroxyethylphenol lactone copolymers)

IT Vinyl compounds, uses  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polymers; weather-resistant coating materials and moldings containing bisbenzotriazolylhydroxyethylphenol lactone copolymers)

IT Polymerization catalysts  
(radical; weather-resistant coating materials and moldings containing bisbenzotriazolylhydroxyethylphenol lactone copolymers)

IT Polymerization  
(ring-opening; weather-resistant coating materials and moldings containing bisbenzotriazolylhydroxyethylphenol lactone copolymers)

IT Crosslinking agents  
Lacquers  
UV stabilizers  
Yellowing  
(weather-resistant coating materials and moldings containing bisbenzotriazolylhydroxyethylphenol lactone copolymers)

IT Lactones  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(weather-resistant coating materials and moldings containing bisbenzotriazolylhydroxyethylphenol lactone copolymers)

IT Coating materials  
(weather-resistant; weather-resistant coating materials and moldings containing bisbenzotriazolylhydroxyethylphenol lactone copolymers)

IT 7473-98-5, Darocur 1173  
RL: CAT (Catalyst use); USES (Uses)  
(Darocur 1173; weather-resistant coating materials and moldings containing bisbenzotriazolylhydroxyethylphenol lactone copolymers)

IT 947-19-3, Irgacure 184  
RL: CAT (Catalyst use); USES (Uses)  
(Irgacure 184; weather-resistant coating materials and moldings containing bisbenzotriazolylhydroxyethylphenol lactone copolymers)

IT 71868-10-5, Irgacure 907

RL: CAT (Catalyst use); USES (Uses)  
 (Irgacure 907; weather-resistant coating materials and moldings containing bisbenzotriazolylhydroxyethylphenol lactone copolymers)

IT 78-67-1, AIBN 94-36-0, Benzoyl peroxide, uses  
 RL: CAT (Catalyst use); USES (Uses)  
 (weather-resistant coating materials and moldings containing bisbenzotriazolylhydroxyethylphenol lactone copolymers)

IT 255384-16-8P 255384-17-9P 255384-18-0P 255384-20-4P  
 255384-21-5P 255827-82-8P,  $\epsilon$ -Caprolactone-2,2'-methylenebis[6-(2H-1,2,3-benzotriazole-2-yl)-4-(2-hydroxyethyl)phenol] copolymer  
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)  
 (weather-resistant coating materials and moldings containing bisbenzotriazolylhydroxyethylphenol lactone copolymers)

IT 38808-38-7P, Butyl acrylate-methacrylic acid-methyl methacrylate-vinyl acetate copolymer 77492-22-9P, Acrylic acid-butyl acrylate-2-ethylhexyl methacrylate-hydroxyethyl methacrylate-methyl methacrylate-styrene copolymer 172156-26-2P, Acrylic acid-butyl acrylate-2-ethylhexyl methacrylate-hydroxyethyl methacrylate-styrene copolymer 255820-10-1P, Acrylic acid-butyl acrylate-2-ethylhexyl methacrylate-formaldehyde-hydroxyethyl methacrylate-melamine-methyl methacrylate-styrene copolymer 255820-11-2P, Acrylic acid-butyl acrylate-2-ethylhexyl methacrylate-formaldehyde-hydroxyethyl methacrylate-melamine-styrene copolymer  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (weather-resistant coating materials and moldings containing bisbenzotriazolylhydroxyethylphenol lactone copolymers)

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 RE

- (1) Daicel Chemical Industries Ltd; JP 10265557 A 1998 CAPLUS
- (2) Nippon Paint Co Ltd; US 5760137 A CAPLUS
- (3) Nippon Paint Co Ltd; EP 756614 A1 CAPLUS
- (4) Nippon Paint Co Ltd; WO 9522250 A1
- (5) Nippon Paint Co Ltd; JP 10503787 A 1998
- (6) Otsuka Chemical Co Ltd; US 5922882 A CAPLUS
- (7) Otsuka Chemical Co Ltd; EP 855393 A1 CAPLUS
- (8) Otsuka Chemical Co Ltd; WO 9735847 A1 CAPLUS
- (9) Otsuka Chemical Co Ltd; JP 09316060 A 1997 CAPLUS

L9 ANSWER 17 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2000:43472 CAPLUS

DN 132:109425

ED Entered STN: 18 Jan 2000

TI Coating compositions with good resistance to metal ion-induced discoloration and weather and UV absorbents for use in the compositions

IN Ogawa, Takashi; Akada, Mitsuo; Mori, Hiroshi

PA Ohtsuka Chemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 22 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C09D005-32

ICS C09D004-02; C09D007-12; C09D163-10; C09D167-07; C09D171-00; C09D175-16

ICA C08F290-06; C09K003-00

CC 42-5 (Coatings, Inks, and Related Products)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 2000017204	A2	20000118	JP 1998-186543	19980701
	JP 2918543	B2	19990712		
PRAI	JP 1998-186543		19980701		

CLASS

PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

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JP 2000017204 ICM C09D005-32  
ICS C09D004-02; C09D007-12; C09D163-10; C09D167-07;  
C09D171-00; C09D175-16  
ICA C08F290-06; C09K003-00  
IPCI C09D0005-32 [ICM,6]; C09D0004-02 [ICS,6]; C09D0007-12  
[ICS,6]; C09D0163-10 [ICS,6]; C09D0167-07 [ICS,6];  
C09D0171-00 [ICS,6]; C09D0175-16 [ICS,6]; C08F0290-06  
[ICA,6]; C09K0003-00 [ICA,6]  
IPCR C08F0290-00 [N,C\*]; C08F0290-06 [N,A]; C09D0004-02  
[I,A]; C09D0004-02 [I,C\*]; C09D0005-32 [I,A];  
C09D0005-32 [I,C\*]; C09D0007-12 [I,A]; C09D0007-12  
[I,C\*]; C09D0163-10 [I,A]; C09D0163-10 [I,C\*];  
C09D0167-06 [I,C\*]; C09D0167-07 [I,A]; C09D0171-00  
[I,A]; C09D0171-00 [I,C\*]; C09D0175-14 [I,C\*];  
C09D0175-16 [I,A]; C09D0201-00 [I,A]; C09D0201-00  
[I,C\*]; C09K0003-00 [N,A]; C09K0003-00 [N,C\*]

OS MARPAT 132:109425

AB The coating compns. contain (A) radically polymerizable monomers or/and curable resins, and bisbenzotriazolylphenol compds. Thus, mixing Magicron TC 16U Clear (aminoacrylic clear coating) with 2 phr RUVA-100 {2,2'-methylenebis[6-(2H-1,2,3-benzotriazol-2-yl)-4-(2-hydroxyethyl)phenol]} gave a clear top coating composition for protecting prefinished metal sheet.

ST multilayer coating clear coating UV absorbent bisbenzotriazolylphenol; light stabilizer bisbenzotriazolylphenol clear coating; metal ion discoloration resistance coating

IT Epoxy resins, uses  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(acrylic; coating compns. with good resistance to metal ion-induced discoloration and weather and UV absorbents for use in compns.)

IT Aminoplasts  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(clear coating; coating compns. with good resistance to metal ion-induced discoloration and weather and UV absorbents for use in compns.)

IT UV stabilizers  
(coating compns. with good resistance to metal ion-induced discoloration and weather and UV absorbents for use in compns.)

IT Coating materials  
(transparent; coating compns. with good resistance to metal ion-induced discoloration and weather and UV absorbents for use in compns.)

IT Epoxy resins, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(under coating; coating compns. with good resistance to metal ion-induced discoloration and weather and UV absorbents for use in compns.)

IT Coating materials  
(weather-resistant; coating compns. with good resistance to metal ion-induced discoloration and weather and UV absorbents for use in compns.)

IT 9003-08-1P, Formaldehyde-melamine copolymer 38808-38-7P 51097-42-8P, Acrylic acid-butyl methacrylate-2-ethylhexyl acrylate-hydroxyethyl methacrylate-styrene copolymer 63747-55-7P, Acrylic acid-butyl methacrylate-2-ethylhexyl acrylate-hydroxyethyl methacrylate-methyl methacrylate-styrene copolymer 255384-16-8P, Aronix M-8030-tetrahydrofurfuryl acrylate-trimethylolpropane triacrylate copolymer 255384-17-9P, 2-(2-Ethoxyethoxy)ethyl acrylate-pentaerythritol triacrylate-Viscoat 3700 copolymer 255384-18-0P 255384-19-1P, Art Resin UN 3320HA-pentaerythritol triacrylate-pentaerythritol trimethacrylate-tetrahydrofurfuryl acrylate copolymer 255384-20-4P

, Hexa(2-methacryloyloxyethoxy)cyclotriphosphazene-pentaerythritol trimethacrylate-Ripoxy SP 1509 copolymer 255384-21-5P  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(clear coating; coating compns. with good resistance to metal ion-induced discoloration and weather and UV absorbents for use in compns.)

IT 196516-61-7, RUVA-100 196516-62-8 196516-63-9 196516-64-0

RL: MOA (Modifier or additive use); USES (Uses)

(light stabilizer; coating compns. with good resistance to metal ion-induced discoloration and weather and UV absorbents for use in compns.)

IT 255390-94-4, Magicron TC 16U Clear 255390-95-5, Magicron TA 16

RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(top clear coating; coating compns. with good resistance to metal ion-induced discoloration and weather and UV absorbents for use in compns.)

L9 ANSWER 18 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1998:502650 CAPLUS

DN 129:224371

ED Entered STN: 13 Aug 1998

TI Ionic conductor and its preparation

IN Okuo, Masaki; Hikuchi, Keiki; Omura, Hiroshi; Suyama, Shuji

PA Nippon Oil and Fats Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 19 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM H01B001-12

ICS C08L051-00; C08F002-46

CC 76-2 (Electric Phenomena)

Section cross-reference(s): 35, 38, 72

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10208542	A2	19980807	JP 1997-8975	19970121
PRAI	JP 1997-8975		19970121		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 10208542	ICM	H01B001-12
	ICS	C08L051-00; C08F002-46
	IPCI	H01B0001-12 [ICM,6]; C08L0051-00 [ICS,6]; C08F0002-46 [ICS,6]

AB The conductor comprises (A) a support, (B) a polymer layer containing photopolymn. initiating group, and (C) a ion conducting layer formed from a composition containing (a) ion conducting monomer and (b) soluble electrolyte salt

and/or electrolyte salt monomer, which is bonded with B via photopolymn. initiating group. B is formed on A, a composition containing ion conducting monomer and soluble electrolyte salt is contacted with B with irradiation of active energy to give the title ionic conductor. Ionic conductor layers having excellent peeling resistance and high strength are obtained.

ST ionic conductor peeling resistant; photopolymn ionic conductor coating

IT Polyoxyalkylenes, uses

Polyoxyalkylenes, uses  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(acrylic-polyester-; graft copolymer ionic conductor layer and its preparation)

IT Polyesters, uses

Polyesters, uses

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (acrylic-polyoxyalkylene-, graft copolymer ionic conductor layer and its preparation)

IT Polyoxyalkylenes, uses  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (acrylic; graft copolymer ionic conductor layer and its preparation)

IT Coating materials  
 (elec. conductive; graft copolymer ionic conductor layer and its preparation)

IT Conducting polymers  
 Ionic conductors  
 (graft copolymer ionic conductor layer and its preparation)

IT Polymers, uses  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (graft; graft copolymer ionic conductor layer and its preparation)

IT Solid electrolytes  
 (ionic graft copolymer conductor layer and its preparation)

IT Polyurethanes, uses  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyoxyalkylene-, acrylic; graft copolymer ionic conductor layer and its preparation)

IT 7791-03-9, Lithium perchlorate  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (4; graft copolymer ionic conductor layer and its preparation)

IT 13641-97-9DP, Acryloyl isocyanate, reaction products with acryloyl isocyanate, polymer with polyethylene oxides and (meth)acrylates, potassium complex  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (MAI; graft copolymer ionic conductor layer and its preparation)

IT 56-81-5DP, 1,2,3-Propanetriol, reaction product with ethylene glycol and acrylic acid, polymer with polyethylene oxides and (meth)acrylates, uses 79-10-7DP, 2-Propenoic acid, reaction product with ethylene glycol and glycerin, polymer with polyethylene oxides and (meth)acrylates, uses 79-41-4DP, polymer with polyethylene oxides and (meth)acrylates 80-62-6DP, polymer with polyethylene oxides and (meth)acrylates 106-91-2DP, reaction products with partially saponified poly(vinyl acetate), polymer with polyethylene oxides and (meth)acrylates 107-21-1DP, 1,2-Ethanediol, reaction product with glycerin and acrylic acid, polymer with polyethylene oxides and (meth)acrylates, uses 2680-03-7DP, polymer with polyethylene oxides and (meth)acrylates, potassium complex 3524-68-3DP, Kayarad PET-30, polymer with polyethylene oxides and (meth)acrylates, potassium complex 6900-35-2DP, Potassium methacrylate, polymer with polyethylene oxides and (meth)acrylates, potassium complex 7439-93-2DP, Lithium, complexes with ion-conducting polymers, uses 7440-09-7DP, Potassium, complexes with ion-conducting polymers, uses 7440-50-8DP, Copper, complexes with ion-conducting polymers, uses 14798-03-9DP, Ammonium, complexes with ion-conducting polymers, uses 16325-47-6DP, Ammonium methacrylate, polymer with polyethylene oxides and (meth)acrylates 25805-17-8DP, Polyethylloxazoline, reaction products with acryloyl isocyanate, polymer with polyethylene oxides and (meth)acrylates, potassium complex 25852-47-5DP, polymer with polyethylene oxides and (meth)acrylates, potassium complex 26570-48-9DP, polymer with polyethylene oxides and (meth)acrylates 69488-61-5DP, Poly[(propionylimino)ethylene], reaction products with acryloyl isocyanate, polymer with polyethylene oxides and (meth)acrylates, potassium complex 101027-21-8DP, Gohseran L 302, reaction product with glycidyl methacrylate, polymer with polyethylene oxides and (meth)acrylates 120487-52-7DP, Eleminol RS 30, polymer with polyethylene oxides and (meth)acrylates 203309-79-9DP, 1-[4-[2-[2-(Methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-

1-one, polymer with polyethylene oxides and (meth)acrylates  
 212397-55-2DP, Butyl methacrylate-lauryl methacrylate-1-[4-[2-[2-(methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-methyl methacrylate-polyethylene glycol diacrylate graft copolymer, lithium complex 212397-63-2DP, polymer with polyethylene oxides and (meth)acrylates 212397-64-3P, Cerium methacrylate-1-[4-[2-[2-(methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-methyl methacrylate-polyethylene glycol diacrylate-potassium methacrylate-vinylpyrrolidone graft copolymer 212397-65-4P, 1-[4-[2-[2-(Methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-methyl methacrylate-polypropylene glycol dimethacrylate-Elemental RS 30 graft copolymer 212397-66-5DP, 1-[4-[2-[2-(Methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-methyl methacrylate-vinylpyridine graft copolymer, lithium complex 212397-67-6DP, 1-[4-[2-[2-(Methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-methyl methacrylate-polyethylene glycol diacrylate-polyethylene glycol dimethacrylate graft copolymer, complex with lithium and potassium 212397-67-6DP, 1-[4-[2-[2-(Methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-methyl methacrylate-polyethylene glycol diacrylate-polyethylene glycol dimethacrylate graft copolymer, potassium complex 212397-68-7DP, 1-[4-[2-[2-(Methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-KBM 503-methyl methacrylate-polyethylene glycol diacrylate-polyethylene glycol dimethacrylate graft copolymer, potassium complex 212397-69-8DP, N,N-Dimethylacrylamide-1-[4-[2-[2-(methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-methyl methacrylate-pentaerythritol triacrylate-polyethylene glycol diacrylate-polyethylene glycol dimethacrylate graft copolymer, potassium complex 212397-70-1DP, 3,3'-Bis(methacryloyloxyethoxycarbonyl)-4,4'-bis(tert-butylperoxycarbonyl)benzophenone-polyethylene glycol diacrylate-Hexakis(methacryloyloxyethoxy)cyclotriphosphazene graft copolymer, lithium complex 212515-88-3DP, Glycidyl methacrylate-1-[4-[2-[2-(methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-methyl methacrylate-polyethylene glycol diacrylate-propylene glycol monomethyl ether-triethylene tetramine graft copolymer, lithium complex 212520-79-1DP, ammonium complex 212520-81-5DP, Hexamethylene diisocyanate polyethylene glycol copolymer diacrylate-1-[4-[2-[2-(methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-methyl methacrylate-polyethylene glycol diacrylate graft copolymer, copper complex 212571-38-5DP, GE 3A, polymer with polyethylene oxides and (meth)acrylates 212571-90-9DP, Acrylonitrile-GE 3A-1-[4-[2-[2-(methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-methyl methacrylate-polyethylene glycol diacrylate-polyethylene glycol dimethacrylate graft copolymer, potassium complex 212572-38-8P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(graft copolymer ionic conductor layer and its preparation)  
 IT 1762-95-4 7447-39-4, Copper chloride (CuCl<sub>2</sub>), uses 7681-11-0, Potassium iodide (KI), uses 7778-74-7, Potassium perchlorate  
 RL: MOA (Modifier or additive use); USES (Uses)

(graft copolymer ionic conductor layer and its preparation)  
 IT 212397-54-1P, 1-[4-[2-[2-(Methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-methyl methacrylate-polyethylene glycol diacrylate graft copolymer 212397-55-2P, Butyl methacrylate-lauryl methacrylate-1-[4-[2-[2-(methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-methyl methacrylate-polyethylene glycol diacrylate graft copolymer 212397-56-3P, Butyl methacrylate-1-[4-[2-[2-(methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-methyl methacrylate-polyethylene glycol diacrylate graft copolymer 212397-57-4P, Dibutyl fumarate-methyl [2-[4-(2-hydroxy-2-methyl-1-oxopropyl)phenoxy]ethyl] fumarate-polyethylene glycol diacrylate graft copolymer 212397-58-5P, Bis[2-[4-(2-hydroxy-2-methyl-1-oxopropyl)phenoxy]ethyl] itaconate-dibutyl fumarate-polyethylene glycol



diacrylate graft copolymer 212397-59-6P, Lauryl methacrylate-1-[4-(2-methacryloyloxy)phenyl]-2,2-dimethoxy-2-phenyl ethan-1-one-methyl methacrylate-polyethylene glycol diacrylate graft copolymer 212397-60-9P, 1,2-Diphenyl-1,2-ethanedione-2-O-acryloyloxime-1-[4-[2-[2-(methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-methyl methacrylate-polyethylene glycol diacrylate graft copolymer 212397-61-0P, Hydroxyethyl methacrylate-methacrylic acid-1-[4-[2-[2-(methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-methyl methacrylate-polyethylene glycol diacrylate graft copolymer 212397-62-1P, Bu methacrylate-N,N-dimethylaminoethyl methacrylate-1-[4-[2-[2-(methacryloyloxy)ethoxycarbonyloxy]ethoxy]phenyl]-2-hydroxy-2-methylpropan-1-one-Me methacrylate-polyethylene glycol diacrylate-ST graft copolymer  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (ionic graft copolymer conductor layer and its preparation)

L9 ANSWER 19 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1998:400375 CAPLUS  
 DN 129:161679  
 ED Entered STN: 01 Jul 1998  
 TI Reactions of ferrocenyl amines and alcohols with hexachlorocyclotriphosphazene  
 AU Allen, Christopher W.; Myer, Charles N.  
 CS Department of Chemistry, University of Vermont, Burlington, VT, 05405-0125, USA  
 SO Phosphorus, Sulfur and Silicon and the Related Elements (1997), 124 & 125, 431-435  
 CODEN: PSSLEC; ISSN: 1042-6507  
 PB Gordon & Breach Science Publishers  
 DT Journal  
 LA English  
 CC 29-12 (Organometallic and Organometalloidal Compounds)  
 Section cross-reference(s): 35, 72, 80  
 OS CASREACT 129:161679  
 AB The reactions of ferrocenylmethanol, ferrocenyl-2-propanol and N-methyl-2-ferrocenylmethylamine with chlorocyclophosphazenes were examined. The pentachlorocyclotriphosphazene derivative of ferrocenylmethanol undergoes rapid decomposition via a phosphazene-phosphazane rearrangement, however when the alc. function is  $\beta$  to the cyclopentadienyl ring modest yields of  $N_3P_3Cl_5OCHMeCH_2C_5H_4FeCp$  may be obtained. By way of contrast N-methyl-2-ferrocenylmethylamine gives a broad range of stable derivs.,  $N_3P_3Cl_6-n[NMeCH_2C_5H_4FeCp]_n$  ( $n = 1-3$ ). The substitution process follows a predominantly trans nongeminal pathway. The corresponding reaction with the Bu methacrylate derivative,  $N_3P_3Cl_5O(CH_2)_4OC(O)CMe:CH_2$  leads to the unexpected geminal product,  $2,2'-N_3P_3Cl_4[O(CH_2)_4OC(O)CMe:CH_2]NMeCH_2C_5H_4FeCp$ . Polymers containing the 2-ferrocenylmethylamine function were obtained by reactions of poly(dichlorophosphazene) with the ferrocenylamine and by radical addition polymerization of the aforementioned mixed ferrocenylamino Bu methacrylphosphazene.  $[NP(NMeCH_2C_5H_4FeCp)_x(OCH_2CF_3)_2-x]_n$  shows potential for use in glucose sensors. The new materials were characterized by standard methodologies including  $^{31}P$  NMR spectroscopy, cyclic voltammetry and gel permeation chromatog.  
 ST cyclotriphosphazene ferrocenylalkoxy ferrocenylmethylamino prepn; electrochem ferrocenylmethylamino cyclotriphosphazene; glucose sensor ferrocenylmethylamino polyphosphazene; ferrocene cyclotriphosphazene polyphosphazene deriv prepn; redox active phosphazene prepn; ferrocenylmethylamino cyclotriphosphazene polyphosphazene prepn electrochem  
 IT Sensors  
 (electrochem.; poly((ferrocenylmethylamino)(trifluoroethoxy)phosphazene) for glucose)  
 IT Metallocenes  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC

(Process); RACT (Reactant or reagent)  
 (ferrocenes; preparation of ferrocenylalkoxy cyclotriphosphazene and  
 preparation  
 and electrochem. properties of ferrocenylmethylamino  
 cyclotriphosphazenes and poly((ferrocenylmethylamino)(trifluoroethoxy)p  
 hosphazene))

IT Oxidation, electrochemical  
 (of (ferrocenylmethylamino)cyclotriphosphazenes and related  
 polyphosphazenes)

IT Polyphosphazenes  
 RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST  
 (Analytical study); PREP (Preparation); USES (Uses)  
 (preparation and potential use as electrochem. glucose sensor of  
 poly((ferrocenylmethylamino)(trifluoroethoxy)phosphazene))

IT Cyclophosphazenes  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT  
 (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC  
 (Process); RACT (Reactant or reagent)  
 (preparation of ferrocenylalkoxy cyclotriphosphazene and preparation and  
 electrochem. properties of ferrocenylmethylamino cyclotriphosphazenes)

IT 12093-10-6, Ferrocenyl aldehyde  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (borohydride reduction and reaction with methylamine followed by  
 cyanoborohydride reduction)

IT 50-99-7, Glucose, analysis  
 RL: ANT (Analyte); ANST (Analytical study)  
 (electrochem. sensing using poly((ferrocenylmethylamino)(trifluoroethox  
 y)phosphazene))

IT 25231-98-5DP, Hexachlorocyclotriphosphazene polymer, reaction products  
 with (ferrocenylmethyl)methylamine followed by sodium trifluoroethoxide  
 26085-02-9DP, Poly(dichlorophosphazene), reaction products with  
 (ferrocenylmethyl)methylamine followed by sodium trifluoroethoxide  
 57145-77-4DP, reaction products with poly(dichlorophosphazene) followed by  
 sodium trifluoroethoxide  
 RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST  
 (Analytical study); PREP (Preparation); USES (Uses)  
 (preparation and potential use as glucose sensor)

IT 211051-09-1P, 2,2,4,4-Tetrachloro-6-(ferrocenylmethyl)(methyl)amino-6-(4-  
 (2-methyl-2-propenoyloxy)butoxy)cyclotriphosphazene  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and radical initiated copolymn. with Me methacrylate)

IT 138020-35-6P, Sodium ferrocenylmethoxide 211051-37-5P, Sodium  
 1-ferrocenyl-2-propoxide  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and reaction with hexachlorocyclotriphosphazene)

IT 57145-77-4P, (Ferrocenylmethyl)(methyl)amine  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and reactions with hexachlorocyclotriphosphazene and  
 (methacryloylbutoxy)cyclophosphazene)

IT 211051-12-6P, 2,2,4,4,6-Pentachloro-6-((ferrocenylmethyl)(methyl)amino)cyc  
 lotriphosphazene 211051-14-8P, 2,2,4,4-Tetrachloro-6,6-  
 bis((ferrocenylmethyl)(methyl)amino)cyclotriphosphazene 211051-17-1P,  
 cis-2,2,4,6-Tetrachloro-4,6-bis((ferrocenylmethyl)(methyl)amino)cyclotriph  
 osphazene 211051-20-6P, trans-2,2,4,6-Tetrachloro-4,6-  
 bis((ferrocenylmethyl)(methyl)amino)cyclotriphosphazene 211051-28-4P,  
 trans-2,4,6-Trichloro-2,4,6-tris((ferrocenylmethyl)(methyl)amino)cyclotrip  
 hosphazene  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT  
 (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC  
 (Process); RACT (Reactant or reagent)  
 (preparation and reversible chemical/electrochem. oxidation of)

IT 211051-23-9P, 2,2,4-Trichloro-4,6,6-tris((ferrocenylmethyl)(methyl)amino)c

yclotriphosphazene  
 RL: PEP (Physical, engineering or chemical process); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)  
 (preparation and reversible chemical/electrochem. oxidation of)  
 IT 211051-32-0P, Methyl methacrylate-2,2,4,4-tetrachloro-2-(ferrocenylmethyl)(methyl)amino-6-(4-(2-methyl-2-propenoyloxy)butoxy)cyclotriphosphazene copolymer  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and reversible electrochem. oxidation of)  
 IT 211051-11-5P, 2,2,4,4,6-Pentachloro-6-(2-ferrocenyl-1-methylethoxy)cyclotriphosphazene  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 IT 163130-17-4P, 2,2,4,4,6-Pentachloro-6-(4-(2-methyl-2-propenoyloxy)butoxy)cyclotriphosphazene  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (reaction with (ferrocenylmethyl)methylamine)  
 IT 75-56-9P, preparation 12126-82-8P, 1-Ferrocenyl-2-propanol  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (reaction with ferrocenyllithium)  
 IT 1271-15-4P, Ferrocenyllithium  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (reaction with propylene oxide)  
 IT 940-71-6, Hexachlorocyclotriphosphazene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reactions with sodium ferrocenylmethoxide and (ferrocenylmethyl)amine and ring-opening polymerization with subsequent reaction with (ferrocenylmethyl)amine)

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L9 ANSWER 20 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1998:329124 CAPLUS

DN 129:28304

ED Entered STN: 03 Jun 1998

TI Thermal analysis and characterization of 2-allylphenoxyorganocyclotriphosphazene copolymers

AU Wu, Ho-Shing; Ke, Deng-Yuan

CS Department of Chemical Engineering, Yuan-Ze University, Taoyuan, 32026, Taiwan

SO Journal of Polymer Research (1998), 5(2), 95-103  
 CODEN: JPOREP; ISSN: 1022-9760

PB Polymer Society

DT Journal

LA English

CC 35-7 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 36

AB The radical copolymns. of 2-allylphenoxyorganocyclotriphosphazene with chloride, phenoxy, 2,2,2-trifluoroethoxy side group reacting with styrene, Me methacrylate, and vinylbenzyl chloride using AIBN, n-BuLi and UV as initiator were investigated. The type of the copolymn., reaction time, temperature were evaluated to obtain the optimum reaction condition. The incorporation of organophosphazene units into an organic polymer backbone decreased the glass transition temperature and increased the thermal stability of the copolymers. The weight conversion and the mol. weight had a maximum value at reaction temperature of around 70 °C. The order for both weight conversion of the copolymn. and the thermal stability of phosphazene polymer with the co-monomer was VBC > STY > MMA, and with the side group Cl- > C6H5O- > CF3CH2O-. The phosphazene copolymer is of conductivity and crystallization

ST allylphenoxyorganocyclotriphosphazene photochem polymn vinyl monomer; styrene polymn allylphenoxyorganocyclotriphosphazene; methacrylate polymn allylphenoxyorganocyclotriphosphazene; vinylbenzyl chloride polymn allylphenoxyorganocyclotriphosphazene; thermal stability vinyl monomer allylphenoxyorganocyclotriphosphazene copolymer; glass transition vinyl monomer allylphenoxyorganocyclotriphosphazene copolymer; char yield vinyl monomer allylphenoxyorganocyclotriphosphazene copolymer; miscibility vinyl monomer allylphenoxyorganocyclotriphosphazene copolymer

IT Polymerization catalysts  
 (AIBN, n-BuLi; for 2-allylphenoxyorganocyclotriphosphazene polymerization with vinyl monomers)

IT Polyphosphazenes  
 Polyphosphazenes  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (fluorine-containing; thermal anal. and characterization of 2-allylphenoxyorganocyclotriphosphazene copolymers)

IT Miscibility  
 (of 2-allylphenoxyorganocyclotriphosphazene copolymers)

IT Polymerization  
 (photopolymn.; of 2-allylphenoxyorganocyclotriphosphazene polymerization with vinyl monomers)

IT Fluoropolymers, preparation  
 Fluoropolymers, preparation  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (polyphosphazene-; thermal anal. and characterization of 2-allylphenoxyorganocyclotriphosphazene copolymers)

IT Glass transition  
 Thermal stability  
 (thermal anal. and characterization of 2-allylphenoxyorganocyclotriphosphazene copolymers)

IT Polyphosphazenes  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (thermal anal. and characterization of 2-allylphenoxyorganocyclotriphosphazene copolymers)

IT 78-67-1, AIBN 109-72-8, Butyllithium, uses  
 RL: CAT (Catalyst use); USES (Uses)  
 (catalysts for 2-allylphenoxyorganocyclotriphosphazene polymerization with vinyl monomers)

IT 180090-89-5P 180090-90-8P 180090-91-9P 180090-92-0P  
 180090-93-1P 180090-94-2P 181940-30-7P 181940-31-8P  
 181940-32-9P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (thermal anal. and characterization of 2-allylphenoxyorganocyclotriphosphazene copolymers)

RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD

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- (11) Neilson, H; J Macromol Sci Chem 1981, VA16, P425
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L9 ANSWER 21 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1998:52070 CAPLUS

DN 128:61892

ED Entered STN: 29 Jan 1998

TI Synthesis and Radical Polymerization of Methacrylate Monomers Containing Cyclotriphosphazene. Thin-Layer Grafts of Their Polymers on a Poly(vinyl alcohol) Surface

AU Dez, Isabelle; Jaeger, Roger De

CS Laboratoire de Spectrochimie Infrarouge et Raman, Universite des Sciences et Technologies de Lille, Villeneuve d'Ascq, 59655, Fr.

SO Macromolecules (1997), 30(26), 8262-8269

CODEN: MAMOBX; ISSN: 0024-9297

PB American Chemical Society

DT Journal

LA English

CC 35-8 (Chemistry of Synthetic High Polymers)

AB The reaction between (4-hydroxyphenoxy)pentakis(4-ethylphenoxy)cyclotriphosphazene obtained by the reaction of the (4-methoxyphenoxy)pentakis(4-ethylphenoxy)cyclotriphosphazene with BBr<sub>3</sub>/H<sub>2</sub>O-and methacryloyl chloride led to (4-methacryloyloxy)pentakis(4-ethylphenoxy)cyclotriphosphazene (I). Radical polymerization of I led to the hybrid inorg.-organic poly(cyclophosphazene-methacrylate) (II). The structures of both classes of compds. were investigated by <sup>31</sup>P, <sup>13</sup>C, and <sup>1</sup>H NMR, IR spectroscopy, mass spectrometry, size exclusion chromatog., and elemental anal. The thermal behavior of the new polymer II was investigated and compared to the one of poly(Ph methacrylate). It was demonstrated that the incorporation of cyclophosphazene as pendant group increases the thermal stability of the corresponding organic polymer. The free-radical promoted grafting of II onto poly(vinyl alc.) surface was described. The resultant surfaces were studied by ATR-IR, XPS, and contact angle techniques. It was demonstrated that the presence of Et functions in II increases the grafting yield.

ST radical polymn methacrylate contg cyclotriphosphazene; grafting polyvinyl alc cyclotriphosphazene contg methacrylate

IT Contact angle

(of water on cyclotriphosphazene group-containing polymethacrylate)

IT 123-07-9, 4-Ethylphenol 150-76-5, 4-Methoxyphenol 920-46-7,

Methacryloyl chloride 940-71-6, Hexachlorotriphosphazene

RL: RCT (Reactant); RACT (Reactant or reagent)

(in preparation of cyclotriphosphazene group-containing methacrylate monomer)

IT 200334-86-7P, Chloropenta(4-ethylphenoxy)cyclotriphosphazene

200334-87-8P, (4-Methoxyphenoxy)pentakis(4-ethylphenoxy)cyclotriphosphazene

200334-88-9P, (4-Hydroxyphenoxy)pentakis(4-

ethylphenoxy)cyclotriphosphazene

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(in preparation of cyclotriphosphazene group-containing methacrylate monomer)

IT 200334-90-3P, (4-Methacryloyloxy)pentakis(4-

ethylphenoxy)cyclotriphosphazene homopolymer 200334-91-4P,  
(4-Methacryloyloxy)pentakis(4-ethylphenoxy)cyclotriphosphazene-vinyl  
alcohol graft copolymer

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation and characterization of)

IT 200334-89-0P, (4-Methacryloyloxy)pentakis(4-  
ethylphenoxy)cyclotriphosphazene

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(preparation and polymerization of)

RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD  
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L9 ANSWER 22 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1997:430254 CAPLUS

DN 127:136103

ED Entered STN: 11 Jul 1997

TI Copolymerization of 2-(4'-vinyl-4-biphenyloxy)pentachlorocyclotriphospha  
zene with acrylate and methacrylate monomers

AU Selvaraj, I. Immanuel; Chandrasekhar, V.

CS Dep. Chemistry, Indian Inst. Technology, Kanpur, 208 016, India

SO Polymer (1997), 38(14), 3617-3623

CODEN: POLMAG; ISSN: 0032-3861

PB Elsevier

DT Journal

LA English

CC 35-4 (Chemistry of Synthetic High Polymers)

AB A cyclophosphazene substituted organic monomer, 2-(4'-vinyl-4-biphenyloxy)  
pentachlorocyclotriphosphazene (CPHVB), has been copolymd. with Me  
acrylate (MA), Et acrylate (EA) and Me methacrylate (MMA) using free  
radical methods. Flame retardant thermally stable copolymers with up to a  
maximum of 90% phosphazene content were obtained. Reactivity ratios and  
Alfrey-Price parameters suggest that the biphenyloxy unit successfully  
insulates the vinyl moiety from the  $\sigma$ -electron withdrawing effect of  
the cyclophosphazene ring.

ST vinyl biphenylyloxy pentachlorocyclotriphosphazene acrylate polymn;  
methacrylate vinyl biphenylyloxy pentachlorocyclotriphosphazene polymn;  
reactivity vinyl biphenylyloxy pentachlorocyclotriphosphazene acrylate  
polymn

IT Q-e value in polymerization  
(copolymn. of 2-(4'-vinyl-4-biphenylyloxy)pentachlorocyclotriphosphazene  
with acrylate and methacrylate monomers)

IT Glass transition temperature  
(properties of 2-(4'-vinyl-4-biphenylyloxy)pentachlorocyclotriphosphazene-acrylate or methacrylate copolymers)

IT Polymerization  
Reactivity ratio in polymerization  
(radical; copolymn. of 2-(4'-vinyl-4-biphenylyloxy)pentachlorocyclotriphosphazene with acrylate and methacrylate monomers)

IT 122847-49-8P, Methyl methacrylate-2-(4'-vinyl-4-biphenylyloxy)pentachlorocyclotriphosphazene copolymer  
192944-34-6P, Methyl acrylate-2-(4'-vinyl-4-biphenylyloxy)pentachlorocyclotriphosphazene copolymer  
192944-35-7P, Ethyl acrylate-2-(4'-vinyl-4-biphenylyloxy)pentachlorocyclotriphosphazene copolymer  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(copolymn. of 2-(4'-vinyl-4-biphenylyloxy)pentachlorocyclotriphosphazene with acrylate and methacrylate monomers)

IT 80-62-6, Methyl methacrylate 96-33-3, Methyl acrylate 140-88-5, Ethyl  
acrylate 115529-67-4, 2-(4'-Vinyl-4-biphenylyloxy)pentachlorocyclotriphosphazene  
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)  
(reactivity ratio of copolymn. of 2-(4'-vinyl-4-biphenylyloxy)pentachlorocyclotriphosphazene with acrylate and  
methacrylate monomers)

L9 ANSWER 23 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1997:82428 CAPLUS

DN 126:186632

ED Entered STN: 05 Feb 1997

TI Molecular characterization of copolymer of 2-allylphenoxyorganocyclotriphosphazene with styrene, methyl methacrylate and vinylbenzyl chloride

AU Wu, Ho-Shing; Ke, Deng-Yuan

CS Dep. Chem. Eng., Yuan-Ze Inst. Tech., Taichung, Taiwan

SO Polymer (1997), 38(2), 431-436  
CODEN: POLMAG; ISSN: 0032-3861

PB Elsevier

DT Journal

LA English

CC 36-5 (Physical Properties of Synthetic High Polymers)

AB Monomers of 2-allylphenoxy-R-cyclotriphosphazene [R = pentachloro, pentaphenoxy, and 2,2,2-trifluoroethoxy] were synthesized by reacting hexachlorocyclotriphosphazene with 2-allylphenol, phenol and 2,2,2-trifluoroethanol, resp. The copolymn. of 2-allylphenoxy-R-cyclotriphosphazenes with styrene, Me methacrylate or vinylbenzyl chloride was carried out by phase-transfer catalysis. Nine copolymers were identified and characterized by light scattering, viscometry and <sup>31</sup>P NMR spectroscopy. The Huggins constant of the copolymers was -0.11 to 0.52 in DMAC solution, smaller than the values expected for linear and flexible polymers in a good solvent. Micelles of the copolymers behave as impermeable spheres, as determined from hydrodynamics and thermodyn. observations. The structure of the micellar shell was determined. The translational diffusion coefficient, Mark-Houwink constant [0.53], hydrodynamic radius, micellar weight, aggregation number, characteristic ratio, and intrinsic viscosity of the copolymers were obtained. The chains of the copolymers have a high degree of stiffness and a lack of rotational freedom in solution, as indicated by the high values of the ratio of length and mol. weight of repeating unit.

ST allylphenoxy cyclotriphosphazene copolymer prepn mol parameter; micelle

shell structure allylphenoxycyclotriphosphazene copolymer; aggregation  
Huggins const radius polyphosphazene copolymer

IT Viscosity  
(Mark-Houwink constant; preparation and mol. and aggregation properties of  
copolymers of allylphenoxycyclotriphosphazenes)

IT Polymer chains  
(dynamics, stiffness; preparation and mol. and aggregation properties of  
copolymers of allylphenoxycyclotriphosphazenes)

IT Micelles  
Molecular association  
Radius of gyration  
(preparation and mol. and aggregation properties of copolymers of  
allylphenoxycyclotriphosphazenes)

IT Polyphosphazenes  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(preparation and mol. and aggregation properties of copolymers of  
allylphenoxycyclotriphosphazenes)

IT 137856-38-3P, 2-Allylphenoxypentachlorocyclotriphosphazene 137856-40-7P,  
2-Allylphenoxypentaphenoxycyclotriphosphazene 180090-88-4P,  
2-Allylphenoxypenta(2,2,2-trifluoroethoxy)cyclotriphosphazene  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(monomer; preparation of allylphenoxycyclotriphosphazene monomers and  
phase-transfer catalysis polymerization)

IT 180090-89-5P, 2-Allylphenoxypentaphenoxycyclotriphosphazene-styrene  
copolymer 180090-90-8P, 2-Allylphenoxypentaphenoxycyclotriphosph  
azene-methyl methacrylate copolymer 180090-91-9P, 2-  
Allylphenoxypentaphenoxycyclotriphosphazene-vinylbenzyl chloride copolymer  
180090-92-0P, 2-Allylphenoxypenta(2,2,2-trifluoroethoxy)cyclotriphosphazen  
e-styrene copolymer 180090-93-1P, 2-Allylphenoxypenta(2,2,2-  
trifluoroethoxy)cyclotriphosphazene-methyl methacrylate copolymer  
180090-94-2P, 2-Allylphenoxypenta(2,2,2-trifluoroethoxy)cyclotriphosphazen  
e-vinylbenzyl chloride copolymer 181940-30-7P, 2-  
Allylphenoxypentachlorocyclotriphosphazene-styrene copolymer  
181940-31-8P, 2-Allylphenoxypentachlorocyclotriphosphazene-methyl  
methacrylate copolymer 181940-32-9P, 2-Allylphenoxypentachlorocyclotriph  
osphazene-vinylbenzyl chloride copolymer  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(preparation and mol. and aggregation properties of copolymers of  
allylphenoxycyclotriphosphazenes)

IT 75-89-8, 2,2,2-Trifluoroethanol 108-95-2, Phenol, reactions 940-71-6,  
Hexachlorocyclotriphosphazene 1745-81-9, 2-Allylphenol  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation of allylphenoxycyclotriphosphazene monomers and phase-transfer  
catalysis polymerization)

L9 ANSWER 24 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1996:625334 CAPLUS  
DN 125:248578  
ED Entered STN: 23 Oct 1996  
TI Kinetics and Characterization of Copolymerization of (2-  
Allylphenoxy)pentachlorocyclotriphosphazene with Styrene, Methyl  
Methacrylate, and Vinylbenzyl Chloride  
AU Wu, Ho-Shing; Ke, Deng-Yuan  
CS Department of Chemical Engineering, Yuan-Ze Institute of Technology,  
Taoyuan, 135, Taiwan  
SO Industrial & Engineering Chemistry Research (1996), 35(11), 4291-4295  
CODEN: IECRED; ISSN: 0888-5885  
PB American Chemical Society  
DT Journal  
LA English  
CC 35-3 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 36, 37  
AB The monomer (2-allylphenoxy)pentachlorocyclotriphosphazene (Ia) was  
synthesized on reacting hexachlorocyclotriphosphazene with 2-allylphenol



with a phase-transfer catalyst in a dichloromethane/alkaline solution. The copolymers of Ia with styrene, Me methacrylate, and vinylbenzyl chloride were investigated. No improvement in the weight conversion of the copolymer reaction was observed when the duration of copolymerization exceeded 30 h and the reaction temperature was controlled between 60 and 80 °C. Mol. wts. of the copolymers decreased with increasing molar fraction of Ia in the feed, but there was no correlation with the content of Ia in the copolymer. Reactivity ratios and Alfrey-Price parameters for the copolymers were obtained. The copolymers were characterized by using EA, GPC, TGA, and DSC. The incorporation of the phosphazene unit affected the flame-retarding properties of the copolymer. Tensile measurement showed that the copolymer of Ia reacted with Me methacrylate was hard and brittle.

- ST reactivity ratio allylphenoxypentachlorocyclotriphosphazene polymer vinyl monomer; Alfrey Price parameter allylphenoxypentachlorocyclotriphosphazene polymer vinyl; vinylbenzyl chloride copolymer allylphenoxypentachlorocyclotriphosphazene; methyl methacrylate copolymer allylphenoxypentachlorocyclotriphosphazene; styrene copolymer allylphenoxypentachlorocyclotriphosphazene; tensile property allylphenoxypentachlorocyclotriphosphazene copolymer; flame retardant allylphenoxypentachlorocyclotriphosphazene copolymer
- IT Phosphazene polymers  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(characterization of (2-allylphenoxy)pentachlorocyclotriphosphazene polymers with styrene, Me methacrylate, and vinylbenzyl chloride)
- IT Fire-resistant materials  
(characterization of (2-allylphenoxy)pentachlorocyclotriphosphazene polymerization with styrene, Me methacrylate, and vinylbenzyl chloride)
- IT Glass temperature and transition  
(of (2-allylphenoxy)pentachlorocyclotriphosphazene copolymers with styrene, Me methacrylate, and vinylbenzyl chloride)
- IT Q-e value in polymerization  
Reactivity ratio in polymerization  
(of (2-allylphenoxy)pentachlorocyclotriphosphazene with styrene, Me methacrylate, and vinylbenzyl chloride)
- IT 80-62-6, Methyl Methacrylate 100-42-5, Styrene, reactions 30030-25-2  
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)  
(kinetics and product characterization of (2-allylphenoxy)pentachlorocyclotriphosphazene polymerization with styrene, Me methacrylate, and vinylbenzyl chloride)
- IT 137856-38-3P, (2-Allylphenoxy)pentachlorocyclotriphosphazene  
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(kinetics and product characterization of (2-allylphenoxy)pentachlorocyclotriphosphazene polymerization with styrene, Me methacrylate, and vinylbenzyl chloride)
- IT 181940-30-7P, (2-Allylphenoxy)pentachlorocyclotriphosphazene-styrene copolymer 181940-31-8P, (2-Allylphenoxy)pentachlorocyclotriphosphazene-methyl methacrylate copolymer 181940-32-9P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(kinetics and product characterization of (2-allylphenoxy)pentachlorocyclotriphosphazene polymerization with styrene, Me methacrylate, and vinylbenzyl chloride)
- IT 940-71-6, Hexachlorocyclotriphosphazene 1745-81-9, 2-Allylphenol  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(monomer synthesis; kinetics and product characterization of (2-allylphenoxy)pentachlorocyclotriphosphazene polymerization with styrene, Me methacrylate, and vinylbenzyl chloride)

L9 ANSWER 25 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1996:551147 CAPLUS  
DN 125:171007  
ED Entered STN: 17 Sep 1996  
TI Weather-resistant (meth)acrylic coating compositions  
IN Tada, Juji; Akata, Atsuo  
PA Otsuka Kagaku Kk, Japan

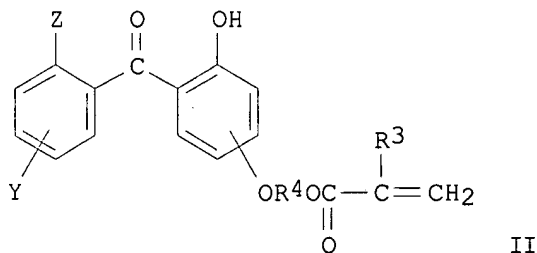
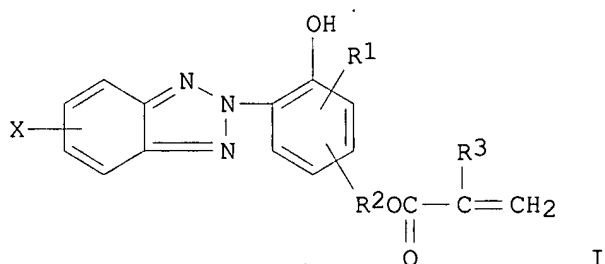
SO Jpn. Kokai Tokkyo Koho, 19 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C08F220-10  
 ICS C08F220-30; C08F220-36; C08F290-04; C09D004-02  
 CC 42-7 (Coatings, Inks, and Related Products)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 08151415	A2	19960611	JP 1995-252476	19950929
PRAI	JP 1994-234707	A1	19940929		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 08151415	ICM	C08F220-10
	ICS	C08F220-30; C08F220-36; C08F290-04; C09D004-02
	IPCI	C08F0220-10 [ICM, 6]; C08F0220-30 [ICS, 6]; C08F0220-36 [ICS, 6]; C08F0290-04 [ICS, 6]; C09D0004-02 [ICS, 6]

OS MARPAT 125:171007  
 GI



AB A weather-resistant composition suitable for surface protective coating of various molded materials comprises (1) (meth)acryloyloxy group-containing (meth)acrylic compds., which can be either oligomers or monomeric compds., and (2) UV-absorbing agents selected from I and II (X = H, halogen; R1 = H, C1-6 alkyl; R2 = C2-12 alkylene; R3 = H, Me; R4 = C2-6 alkylene which may be substituted by OH; Y = H, C1-6 alkoxy; Z = H, OH). A coating composition contained 40 parts of Aronix M 8030 (polyester acrylate), 20 parts tetrahydrofurfuryl acrylate, 40 parts trimethylolpropane triacrylate, 3 parts 2-(2'-hydroxy-5'-acryloyloxyethylphenyl)-2H-benzotriazole, and 3 parts of a polymerization initiator. The composition was applied on a polycarbonate plate and irradiated with a high-pressure mercury lamp to form a coating with pencil hardness 2H and showing good results in a weather exposure test.

ST methacrylic coating weather resistance; UV absorbent methacrylic benzotriazole

IT Acrylic polymers, uses

RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(weather-resistant (meth)acrylic coating compns.)

IT Light stabilizers

(UV, weather-resistant (meth)acrylic coating compns. containing reactive UV absorbents)

IT Coating materials

(weather-resistant, weather-resistant (meth)acrylic coating compns.)

IT 2399-48-6, Tetrahydrofurfuryl acrylate 3524-66-1, Pentaerythritol trimethacrylate 3524-68-3, Pentaerythritol triacrylate 4687-94-9, Ripoxy SP 1509 7328-17-8 13048-33-4 15625-89-5, Trimethylolpropane triacrylate 16432-81-8 29570-58-9, Dipentaerythritol hexaacrylate 61287-25-0, Aronix M 8030 92832-53-6 95523-89-0, Viscoat 3700 96478-09-0 108251-12-3, Aronix M 1200 130504-36-8 149531-40-8, Art resin UN 3320HA 170103-27-2 180782-04-1 180782-06-3 180782-11-0 180782-14-3 180782-16-5 180782-19-8 180782-21-2 180782-23-4 180782-26-7 180782-29-0 180782-30-3 180782-32-5 180782-34-7 180782-36-9 180782-38-1 180782-41-6 180782-43-8 180782-45-0 180782-47-2 180782-49-4 180782-52-9 180782-55-2 180782-58-5 180782-61-0 180782-64-3 180782-66-5 180782-68-7 180782-70-1 180782-73-4 180782-76-7 180782-79-0 180782-82-5 180782-85-8 180782-88-1

RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(weather-resistant (meth)acrylic coating compns.)

L9 ANSWER 26 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1996:467605 CAPLUS

DN 125:143448

ED Entered STN: 08 Aug 1996

TI Synthesis, characterization, and modification of 2-allylphenoxyorganocyclotriphosphazene copolymers

AU Wu, Ho-Shing; Ke, Deng-Yuan

CS Dep. Chem. Engineering, Yuan-Ze Institute Technology, Taichung, Peop. Rep. China

SO Journal of Applied Polymer Science (1996), 61(8), 1351-1358

CODEN: JAPNAB; ISSN: 0021-8995

PB Wiley

DT Journal

LA English

CC 35-6 (Chemistry of Synthetic High Polymers)

AB The monomer 2-allylphenoxyorganocyclotriphosphazene (I) with phenoxy (or 2,2,2-trifluoroethoxy) side group was synthesized on reacting hexachlorocyclotriphosphazene with phenol (or 2,2,2-trifluoroethanol) and 2-allylphenol with phase-transfer catalysis in a dichloromethane/alkaline solution. The synthesis had a large yield (>80%) and narrow product distribution and proceeded under mild conditions. The radical copolymn. of I with styrene, Me methacrylate, or vinylbenzyl chloride using AIBN as an initiator was investigated. Reactivity ratios and Alfrey-Price parameters for copolymers were obtained. Organophosphazene monomer I was less reactive than the other one. The thermal stability of the copolymer with phenoxy side group was greater than that with 2,2,2-trifluoroethoxy side group. The incorporation of organophosphazene units into an organic polymer backbone decreased Tg but increased the thermal stability of the copolymers. Young's modulus tended to decrease and the polymer became softer and ductile when the incorporated amount of I increases.

ST reactivity ratio polymn allylphenoxyorganocyclotriphosphazene vinyl monomer; modulus thermal stability allylphenoxyorganocyclotriphosphazene copolymer; allylphenoxyorganocyclotriphosphazene polymn styrene methacrylate vinylbenzyl chloride

IT Polymerization catalysts

(synthesis of 2-allylphenoxypentaphenoxycyclotriphosphazene copolymers with AIBN or BuLi catalysts)

IT Chains, chemical

Glass temperature and transition

Polymerization

Q-e value in polymerization

Reactivity ratio in polymerization

(synthesis, characterization, and modification of 2-allylphenoxy-pentaphenoxycyclotriphosphazene copolymers)

IT Phosphazene polymers

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(synthesis, characterization, and modification of 2-allylphenoxy-pentaphenoxycyclotriphosphazene copolymers)

IT 78-67-1, AIBN 109-72-8, n-Butyllithium, uses

RL: CAT (Catalyst use); USES (Uses)

(synthesis of 2-allylphenoxy-pentaphenoxycyclotriphosphazene copolymers with AIBN or BuLi catalysts)

IT 137856-40-7P 180090-88-4P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(synthesis, characterization, and modification of 2-allylphenoxy-pentaphenoxycyclotriphosphazene copolymers)

IT 180090-89-5P 180090-90-8P 180090-91-9P 180090-92-0P

180090-93-1P 180090-94-2P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(synthesis, characterization, and modification of 2-allylphenoxy-pentaphenoxycyclotriphosphazene copolymers)

IT 75-89-8 80-62-6 100-42-5, reactions 108-95-2, Phenol, reactions

940-71-6, Hexachlorocyclotriphosphazene 1745-81-9, 2-Allylphenol

30030-25-2

RL: RCT (Reactant); RACT (Reactant or reagent)

(synthesis, characterization, and modification of 2-allylphenoxy-pentaphenoxycyclotriphosphazene copolymers)

IT 5032-39-3P, Chloropentaphenoxycyclotriphosphazene

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(synthesis, characterization, and modification of 2-allylphenoxy-pentaphenoxycyclotriphosphazene copolymers)

L9 ANSWER 27 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1995:905909 CAPLUS

DN 124:31116

ED Entered STN: 09 Nov 1995

TI Temperature-sensitive hydrogels and their hydrogels for control of drug release

IN Ikeda, Koichi; Tamura, Kazumi; Murata, Kazuyuki; Okano, Mitsuo; Sakurai, Yasuhisa

PA Nippon Kayaku Kk, Japan

SO Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08F220-56

ICS A61K009-00; A61K009-70; C08F220-58

ICI C08F220-56, C08F230-08; C08F220-58, C08F230-08

CC 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 63

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 07228639	A2	19950829	JP 1994-43361	19940218
	JP 3541894	B2	20040714		
PRAI	JP 1994-43361		19940218		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 07228639	ICM	C08F220-56
	ICS	A61K009-00; A61K009-70; C08F220-58
	ICI	C08F220-56, C08F230-08; C08F220-58, C08F230-08

IPCI C08F0220-56 [ICM,6]; A61K0009-00 [ICS,6]; A61K0009-70  
[ICS,6]; C08F0220-58 [ICS,6]; C08F0220-56 [ICI,6];  
C08F0230-08 [ICI,6]; C08F0220-58 [ICI,6]; C08F0230-08  
[ICI,6]

ECLA C08F220/54

AB Title hydrogels comprise composites having phase-separated structures of crosslinked temperature-sensitive polymers covalently bonded with inorg. polymers. Thus, N-isopropylacrylamide 5, N-vinyl-2-pyrrolidone 0.263, and eicosamethyl-1,19-divinyldecasiloxane 1.12 g were polymerized in 1,4-dioxane containing tert-Bu peroxy-2-ethylhexanoate to give a hydrogel showing phase transition temperature 36.4° and tensile strength 19.5 kg/cm<sup>2</sup>.

ST hydrogel temp sensitive drug delivery; acrylic siloxane hydrogel temp sensitive; eicosamethyldivinyldecasiloxane copolymer hydrogel temp sensitive; vinylpyrrolidone copolymer hydrogel temp sensitive; isopropylacrylamide copolymer hydrogel temp sensitive

IT Pharmaceutical dosage forms

(phase-separated inorg. polymer-organic polymer composite temperature-sensitive hydrogels useful for control of drug release)

IT Phosphazene polymers

Siloxanes and Silicones, uses

RL: TEM (Technical or engineered material use); THU (Therapeutic use);

BIOL (Biological study); USES (Uses)

(acrylic, phase-separated inorg. polymer-organic polymer composite temperature-sensitive hydrogels useful for control of drug release)

IT 171729-40-1P, Eicosamethyl-1,19-divinyldecasiloxane-N-isopropylacrylamide-N-vinyl-2-pyrrolidone copolymer 171729-41-2P, Ethylene glycol dimethacrylate-N-isopropylacrylamide-3-methacryloxypropyltrimethoxysilane-N-vinyl-2-pyrrolidone copolymer 171729-42-3P, Eicosamethyl-1,19-divinyldecasiloxane-N-isopropylacrylamide-3-methacryloxypropyltrimethoxysilane-N-vinyl-2-pyrrolidone copolymer 171729-44-5P, 1,3-Bis(3-methacryloxypropyl)-1,1,3,3-tetramethyldisiloxane-N-isopropylacrylamide-N-vinyl-2-pyrrolidone copolymer 171729-46-7P, Hexakis(2-methacryloxyethyl)cyclotriphosphazene-N-isopropylacrylamide-N-vinyl-2-pyrrolidone copolymer

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(phase-separated inorg. polymer-organic polymer composite temperature-sensitive hydrogels useful for control of drug release)

L9 ANSWER 28 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1995:476651 CAPLUS

DN 122:313980

ED Entered STN: 08 Apr 1995

TI Reaction pathways in the thermolysis of (2-oxyethylmethacryl)pentachlorocyclotriphosphazene

AU Hayes, Robert F.; Allen, Christopher W.

CS Dep. Chem., Univ. Vermont, Burlington, VT, 05405-0125, USA

SO Phosphorus, Sulfur and Silicon and the Related Elements (1994), 93-94(1-4), 269-72

CODEN: PSSLEC; ISSN: 1042-6507

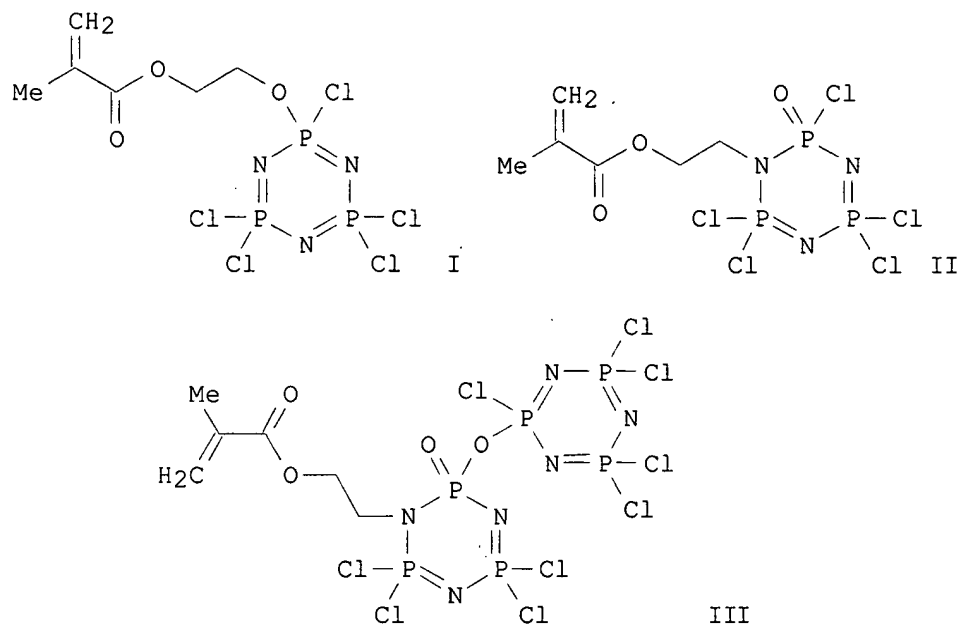
PB Gordon & Breach

DT Journal

LA English

CC 22-6 (Physical Organic Chemistry)

GI



AB The (2-oxyethyl methacryl) pentachlorocyclotriphosphazene,  $\text{N}_3\text{P}_3\text{Cl}_5\text{OCH}_2\text{CH}_2\text{OC}(\text{O})\text{C}(\text{Me})=\text{CH}_2$  (I), has been shown to undergo a slow rearrangement to the corresponding phosphazane (II). Monitoring of the rate of rearrangement at  $35^\circ$  to  $111^\circ$  shows a first order process in I with a pos. enthalpy and neg. entropy of activation. A mechanism based on tightly bound ion pairs and transfer of the  $\text{CH}_2\text{CH}_2\text{C}(\text{O})\text{C}(\text{CH}_3)=\text{CH}_2$  moiety to the nitrogen center is proposed. A hydrolysis product,  $\text{N}_3\text{P}_3\text{Cl}_5\text{OH}$  and significant amts. of the unique oxo-bridged dimer,  $\text{N}_3\text{P}_3\text{Cl}_5\text{OP}(\text{O})\text{NCH}_2\text{CH}_2\text{OC}(\text{O})\text{C}(\text{Me})=\text{CH}_2(\text{NPCl}_2)_2$  (III) have also been observed. The identity of III was established by  $31\text{P}$  COSY expts. and mass spectrometry. The formation of these products can be related to the proposed mechanistic pathway. The rearrangement in related oxyalkylalkylphosphazenes has been explored.

ST rearrangement oxyethylmethacrylpentachlorocyclotriphosphazene kinetics mechanism

IT Kinetics of rearrangement  
Rearrangement

(of (2-oxyethylmethacryl)pentachlorocyclotriphosphazene)

IT 163130-14-1 163130-17-4

RL: RCT (Reactant); RACT (Reactant or reagent)  
(attempted. rearrangement of)

IT 125553-74-4, (2-Oxyethylmethacryl)pentachlorocyclotriphosphazene

RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)  
(kinetics and mechanism of rearrangement of (2-oxyethylmethacryl)pentachlorocyclotriphosphazene)

IT 163130-15-2P 163130-16-3P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(kinetics and mechanism of rearrangement of (2-oxyethylmethacryl)pentachlorocyclotriphosphazene)

IT 92832-53-6 163130-18-5 163130-19-6

RL: RCT (Reactant); RACT (Reactant or reagent)  
(rearrangement of)

L9 ANSWER 29 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1994:667930 CAPLUS

DN 121:267930

ED Entered STN: 26 Nov 1994

TI holographic recording material

IN Tani, Motoaki  
 PA Fujitsu Ltd, Japan  
 SO Jpn. Kokai Tokkyo Koho, 4 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM G03H001-02  
 ICS G03F007-004; G03F007-028; G03F007-032  
 CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06035389	A2	19940210	JP 1992-192432	19920720
PRAI	JP 1992-192432		19920720		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 06035389	ICM	G03H001-02
	ICS	G03F007-004; G03F007-028; G03F007-032
	IPCI	G03H0001-02 [ICM,5]; G03F0007-004 [ICS,5]; G03F0007-028 [ICS,5]; G03F0007-032 [ICS,5]

AB A highly sensitive holog. recording material comprises a binder resin containing a carbazole ring in the repeating unit, an acryl and a phosphazene monomer having a refractive index lower than that of the binder resin, a sensitizer, and a biimidazole photoinitiator.

ST photopolymerizable holog recording material phosphazene; acryl  
 photopolymerizable holog recording material; carbazole binder  
 photopolymerizable holog material

IT Holography  
 (photopolymerizable compns. containing carbazole resins and acryl and phosphazene monomers for)

IT 25067-59-8, Poly(N-vinylcarbazole)

RL: USES (Uses)

(photopolymerizable compns. containing acryl and phosphazene monomers and, for holog.)

IT 7189-82-4, 2,2'-Bis(o-chlorophenyl)-4,4',5,5'-tetraphenyl-1,2'-biimidazole  
 38215-36-0, 3-(2'-Benzothiazolyl)-7-N,N-diethylaminocoumarin 63226-13-1  
 79579-93-4, 4-Butoxyphenyl-2,6-diphenylthiopyrylium perchlorate  
 96273-26-6, 4-tert-Butyl-2,6-bis(4'-dimethylaminobenzylidene)cyclohexanone  
 RL: USES (Uses)

(photopolymerizable compns. containing carbazole resins and acryl and phosphazene monomers and, for holog.)

IT 15625-89-5, Trimethylolpropanetriacrylate 56093-53-9, Pentaerythritol  
 acrylate

RL: USES (Uses)

(photopolymerizable compns. containing carbazole resins and phosphazene monomers and, for holog.)

IT 92832-53-6, Hexakis(methacryloyloxyethoxy)cyclotriphosphazene

RL: USES (Uses)

(photopolymerizable compns. containing carbazole resins and, for holog.)

L9 ANSWER 30 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1994:641701 CAPLUS

DN 121:241701

ED Entered STN: 12 Nov 1994

TI electrophotog. photoreceptor

IN Nagahara, Susumu; Maruyama, Akio

PA Canon Kk, Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03G005-147

ICS G03G005-147; G03G005-05; H04N001-29

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

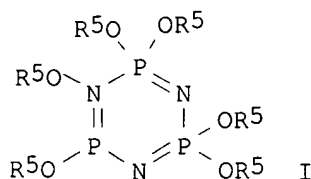
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06019176	A2	19940128	JP 1992-192751	19920629
PRAI	JP 1992-192751		19920629		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 06019176	ICM	G03G005-147
	ICS	G03G005-147; G03G005-05; H04N001-29
	IPCI	G03G0005-147 [ICM,5]; G03G0005-147 [ICS,5]; G03G0005-05 [ICS,5]; H04N0001-29 [ICS,5]

GI



AB An electrophotog. photoreceptor showing reduced contamination and improved surface sliding and cleaning properties comprises, on an electroconductive support, a photosensitive layer and a protective layer comprising dispersed metal oxide particles surface-treated with a compound represented by the formula  $\text{CH}_2=\text{CR}_1\text{CO}_2\text{XSi}(\text{OR}_2)(\text{OR}_3)\text{OR}_4$  ( $\text{R}_1 = \text{H}$  or methyl;  $\text{R}_2-4 = \text{H}$  or  $\text{C}_1-4$  alkyl;  $\text{X} = \text{C}_1-6$  alkylene) and a resin prepared by polymerization of a compound

represented by the formula I ( $\text{R}_6 = \text{ZOCOCR}_7=\text{CH}_2$ ;  $\text{R}_7 = \text{H}$  or methyl;  $\text{Z} =$  alkylene or arylene).

ST electrophotog photoreceptor protective layer metal oxide

IT Electrophotographic photoconductors and photoreceptors  
(protective layers containing resin-coated metal oxide particles for)

IT 2530-85-0,  $\gamma$ -Methacryloxypropyltrimethoxysilane

RL: USES (Uses)

(antimony-containing tin oxide particles coated with, for protective layers for electrophotog. photoreceptors)

IT 1332-29-2, Tin oxide

RL: USES (Uses)

(antimony-containing, particles, coated with resins for protective layers for electrophotog. photoreceptors)

IT 92832-53-6 147075-51-2

RL: USES (Uses)

(protective layers containing resin-coated metal oxide particles and, for electrophotog. photoreceptors)

IT 7440-36-0, Antimony, uses

RL: USES (Uses)

(tin oxide particles containing, coated with resins for protective layers for electrophotog. photoreceptors)

L9 ANSWER 31 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1994:485900 CAPLUS

DN 121:85900

ED Entered STN: 20 Aug 1994

TI Phosphazene-type polymer-coated parts with weatherability and abrasion resistance

IN Mori, Shigeo; Ando, Hiroyuki

PA Idemitsu Petrochemical Co, Japan

SO Jpn. Kokai Tokkyo Koho, 22 pp.

CODEN: JKXXAF



DT Patent  
 LA Japanese  
 IC ICM C08J007-04  
 ICS B32B027-00; C08L085-02  
 ICA C08F299-02  
 ICI C08L085-02  
 CC 42-10 (Coatings, Inks, and Related Products)  
 Section cross-reference(s): 38

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06001869	A2	19940111	JP 1992-162381	19920622
PRAI	JP 1992-162381		19920622		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 06001869	ICM	C08J007-04
	ICS	B32B027-00; C08L085-02
	ICA	C08F299-02
	ICI	C08L085-02
	IPCI	C08J0007-04 [ICM,5]; C08J0007-00 [ICM,5,C*]; B32B0027-00 [ICS,5]; C08L0085-02 [ICS,5]; C08F0299-02 [ICA,5]; C08F0299-00 [ICA,5,C*]; C08L0085-02 [ICI,5]; C08L0085-00 [ICI,5,C*]

AB Title parts comprise substrates, interlayers comprising (1) curable resins having thermal expansion coefficient (E)  $\geq 5 + 10^{-5}$  cm-cm-1-°C-1 at 40° or (2) thermoplastic resins having modulus of tensile elasticity  $\leq 2000$  MPa, and surface layers comprising curable polyphosphazenes. Thus, 55.0 g hexachlorocyclotriphosphazene was treated with 143 g 2-hydroxyethyl methacrylate in toluene in the presence of pyridine at 80° for 8 h to give 1,1,3,3,5,5-hexa(methacryloyloxyethoxy)cyclotriphosphazene, 40 parts of which was mixed with UA 306H 30, Sartomer 9505 (bifunctional urethane acrylate) 30, colloidal silica 100, Irgacure 184 (I) 1, Tinuvin 144 1, butanol 50, and Me iso-Bu ketone 80 parts, applied onto a transparent polycarbonate substrate with UV-cured precoat containing Sartomer 9640 (bifunctional urethane acrylate) 80, Kayarad PEG4000DA 12, Kayarad DPHA 3, I 3, a UV absorber 10, and solvents 200 parts showing E  $6.0 + 10^{-5}$  cm-cm-1-°C-1, treated at room temperature for 1 min, dried at 80° for 10 min, and UV-irradiated to give a 8- $\mu$ m surface layer showing retention of appearance, adhesion, and color after 2000-h exposure to weatherometer.

ST polyphosphazene coating primer thermal expansion; polycarbonate substrate abrasion resistant coating; acrylic polyphosphazene coating; photocurable phosphazene polymer coating; tensile elasticity primer polyphosphazene coating; weatherability polyphosphazene coating; wear resistance polyphosphazene coating; primer acrylic resin polyphosphazene topcoating

IT Coating materials  
 (abrasion- and heat- and weather-resistant, acrylic polyphosphazenes, primers with controlled thermal expansion and tensile elasticity for)

IT Urethane polymers, uses  
 RL: USES (Uses)  
 (acrylic, primers, for polyphosphazene top coatings, with weatherability and wear resistance)

IT 155880-83-4P, 1,1,3,3,5,5-Hexa(methacryloylethylenedioxy)cyclotriphosphazene-Sartomer 9505-UA 306H copolymer  
 RL: PREP (Preparation)

(preparation of, coatings, with weatherability and wear resistance, primers for)

IT 92832-53-6P  
 RL: PREP (Preparation)  
 (preparation of, for curable coatings, with wear resistance and weatherability)

IT 9011-87-4P 155880-84-5P 156738-01-1P  
 RL: PREP (Preparation)

(preparation of, for interlayers for polyphosphazene top coatings, with weatherability and wear resistance)

IT 868-77-9

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, with cyclotriphosphazenes, for curable coatings)

IT 940-71-6, Hexachlorocyclotriphosphazene

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, with hydroxy-containing acrylates, for curable phosphazenes)

L9 ANSWER 32 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1994:446715 CAPLUS

DN 121:46715

ED Entered STN: 23 Jul 1994

TI holographic recording material

IN Tani, Motoaki

PA Fujitsu Ltd, Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03H001-02

ICS G03C009-08; G03F007-004; G03F007-027; G03F007-028; G03F007-033

CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05341702	A2	19931224	JP 1992-151026	19920611
PRAI	JP 1992-151026		19920611		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 05341702	ICM	G03H001-02
	ICS	G03C009-08; G03F007-004; G03F007-027; G03F007-028; G03F007-033
	IPCI	G03H0001-02 [ICM,5]; G03C0009-08 [ICS,5]; G03C0009-00 [ICS,5,C*]; G03F0007-004 [ICS,5]; G03F0007-027 [ICS,5]; G03F0007-028 [ICS,5]; G03F0007-033 [ICS,5]

AB A holog. recording material showing high diffraction efficiency and light transmittance and good resistance to moisture comprises a photopolymerizable composition containing a binder resin containing a carbazole ring in

the structural unit, polymerizable phosphazene derivative and acrylic monomers having a refractive index lower than that of the binder resin., a photopolymn. initiator, and a photosensitizer.

ST holog recording material polycarbazole binder; acrylic monomer holog recording material; phosphazene monomer holog recording material

IT Holography

(photopolymerizable compns. containing polycarbazole binders and phosphazene and acrylic monomers for)

IT 25067-59-8, Poly(N-vinylcarbazole)

RL: USES (Uses)

(photopolymerizable compns. containing polycarbazole binders and phosphazene derivative and acrylic monomers for)

IT 76-54-0, 2',7'-Dichlorofluorescein 94-36-0, Benzoyl peroxide, uses 103-01-5, N-Phenylglycine 3524-68-3, Pentaerythritol triacrylate 6542-67-2, 2,4,6-Tris(trichloromethyl)-1,3,5-triazine 6652-28-4, Isopropyl benzoin ether 7473-98-5, 2-Hydroxy-2-methylpropiophenone 12176-31-7, ( $\eta$ 6-Benzene)( $\eta$ 5-cyclopentadienyl)iron(II)hexafluorophosphate 15625-89-5, Trimethylolpropane triacrylate 24650-42-8, Benzyl dimethyl ketal 29570-58-9, Dipentaerythritol hexaacrylate 38215-36-0 51325-91-8, 4-(Dicyanomethylene)-2-methyl-6-(p-dimethylaminostyryl)-4H-pyran 77473-08-6, 3,3',4,4'-Tetrakis(tert-butylperoxycarbonyl)benzophenone 79579-93-4 92832-53-6 96273-26-6, 4-tert-Butyl-2,6-bis(4'-dimethylaminobenzylidene)cyclohexanone 100844-79-9

RL: USES (Uses)  
(photopolymerizable compns. containing, for holog. recording materials)

L9 ANSWER 33 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1994:311768 CAPLUS  
DN 120:311768  
ED Entered STN: 11 Jun 1994  
TI Holographic recording material  
IN Tani, Motoaki  
PA Fujitsu Ltd, Japan  
SO Jpn. Kokai Tokkyo Koho, 5 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM G03H001-02  
ICS G03C001-675; G03C001-72; G03F007-004; G03F007-027; G03F007-038  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05165389	A2	19930702	JP 1991-329361	19911213
PRAI	JP 1991-329361		19911213		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 05165389	ICM	G03H001-02
	ICS	G03C001-675; G03C001-72; G03F007-004; G03F007-027; G03F007-038
	IPCI	G03H0001-02 [ICM,5]; G03C0001-675 [ICS,5]; G03C0001-72 [ICS,5]; G03F0007-004 [ICS,5]; G03F0007-027 [ICS,5]; G03F0007-038 [ICS,5]

AB The title holog. recording material comprises a binder resin containing carbazole rings in its repeating units, a phosphazene type polymerizable monomer of n lower than that of the binder resin, a photopolymn. initiator, and a sensitizer and the phosphazene type polymerizable monomer will be polymerized when exposed to light. This recording material is chemical stable and shows good humidity resistance and high sensitivity.

ST holog recording material carbazole resin; phosphazene monomer holog recording material

IT Recording materials  
(holog., carbazole type binder resin and phosphazene type polymerizable monomer containing)

IT Holography  
(recording materials, carbazole type binder resin and phosphazene type polymerizable monomer containing)

IT 25067-59-8, Poly(N-vinylcarbazole) 26710-15-6, N-Vinylcarbazole-styrene copolymer

RL: USES (Uses)

(binder resin, holog. recording material containing)

IT 92832-53-6

RL: USES (Uses)

(polymerizable monomer, for holog. recording material)

L9 ANSWER 34 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1994:194166 CAPLUS  
DN 120:194166  
ED Entered STN: 16 Apr 1994  
TI UV-curable resin composition for low-shrinkage, weather-resistant coatings  
IN Ando, Hiroyuki  
PA Idemitsu Petrochemical Co., Ltd., Japan  
SO Eur. Pat. Appl., 22 pp.  
CODEN: EPXXDW  
DT Patent  
LA English

IC ICM C08G079-02  
ICS C08F283-00; C08F299-02  
CC 42-10 (Coatings, Inks, and Related Products)  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 557943	A2	19930901	EP 1993-102805	19930224
	EP 557943	A3	19931208		
	R: BE, CH, DE, FR, GB, IT, LI, NL, SE				
	JP 05230156	A2	19930907	JP 1992-37693	19920225
	CA 2090304	AA	19930826	CA 1993-2090304	19930224
PRAI	JP 1992-37693	A	19920225		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 557943	ICM	C08G079-02
	ICS	C08F283-00; C08F299-02
	IPCI	C08G0079-02 [ICM,5]; C08G0079-00 [ICM,5,C*]; C08F0283-00 [ICS,5]; C08F0299-02 [ICS,5]; C08F0299-00 [ICS,5,C*]
	IPCR	C07F0009-00 [I,C*]; C07F0009-6581 [I,A]; C08F0283-00 [I,A]; C08F0283-00 [I,C*]; G03F0007-027 [I,A]; G03F0007-027 [I,C*]
JP 05230156	IPCI	C08F0299-02 [ICM,5]; C08F0299-00 [ICM,5,C*]
CA 2090304	IPCI	C08F0220-10 [ICM,5]; C08F0220-00 [ICM,5,C*]; C08F0230-02 [ICS,5]; C08F0230-00 [ICS,5,C*]
	IPCR	C07F0009-00 [I,C*]; C07F0009-6581 [I,A]; C08F0283-00 [I,A]; C08F0283-00 [I,C*]; G03F0007-027 [I,A]; G03F0007-027 [I,C*]

AB The title composition comprises a curable cyclic or chain phosphazene compound having repeating unit  $-\text{[NP(A)a(B)b]}-$  (A = polymerizable curable group; B = polymerizable non-curing group; a, b > 0; a + b = 2), a multifunctional (meth)acrylate monomer or oligomer or a multifunctional urethane (meth)acrylate, and a crosslinkable compound having a cure shrinkage  $\leq 6\%$ . A coating composition containing 1,1,3,3,5,5-hexa(methacryloylethylenedioxy)cyclotriphosphazene (preparation from hexachlorocyclotriphosphazene and 2-hydroxyethyl methacrylate given), dipentaerythritol hexaacrylate, hexamethylenediol diacrylate, and trimethylolpropane triacrylate had shrinkage factor 5.8.

ST phosphazene acrylic low shrinkage coating; shrinkage low coating  
hexamethacryloylethylenedioxy cyclotriphosphazene;  
methacryloylethylenedioxy cyclotriphosphazene prepn low shrinkage coating

IT Coating materials  
(UV-curable, acrylic phosphazene-polyol (meth)acrylate-(meth)acrylate-  
modified polymer blends, low-shrinkage)

IT Polyesters, uses  
Urethane polymers, compounds  
RL: TEM (Technical or engineered material use); USES (Uses)  
(acrylates, coatings, acrylic phosphazene-polyol (meth)acrylate blends,  
UV-curable, low-shrinkage)

IT Epoxy resins, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(acrylic, coatings, acrylic phosphazene-polyol (meth)acrylate blends,  
UV-curable, low-shrinkage)

IT Phosphonitrile compounds  
(cyclophosphazenes, N-(meth)acryloyloxyethoxy, coatings, blends with  
polyol (meth)acrylates and (meth)acrylate-modified polymers,  
UV-curable, low-shrinkage)

IT Phosphonitrile compounds  
(phosphazenes, N-(meth)acryloyloxyethoxy, coatings, blends with polyol  
(meth)acrylates and (meth)acrylate-modified polymers, UV-curable,  
low-shrinkage)

IT 13048-33-4 15625-89-5 29570-58-9, Dipentaerythritol hexaacrylate  
76482-93-4, Ebecryl 584 77001-81-1, UA 306H 126904-04-9, Sartomer C  
9505

RL: TEM (Technical or engineered material use); USES (Uses)  
 (coating composition containing acrylic phosphazene derivative and,  
 UV-curable,  
 low-shrinkage)  
 IT 79-10-7D, Acrylic acid, esters with diols and polyols 79-41-4D, esters  
 with diols and polyols  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (coating compns. containing acrylic phosphazene derivative and, UV-curable,  
 low-shrinkage)  
 IT 92832-53-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, as UV-curable, low-shrinkage coating component)  
 IT 868-77-9  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with hexachlorocyclotriphosphazene, in preparation of  
 UV-curable, low-shrinkage curable coating component)  
 IT 940-71-6, Hexachlorocyclotriphosphazene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with hydroxyethyl methacrylate, in preparation of UV-curable.  
 low-shrinkage coating component)

L9 ANSWER 35 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1994:65829 CAPLUS

DN 120:65829

ED Entered STN: 05 Feb 1994

TI Electrophotographic photoreceptor

IN Kurahashi, Akihiko

PA Idemitsu Petrochemical Co., Ltd., Japan

SO PCT Int. Appl., 39 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

IC ICM G03G005-147

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9307540	A1	19930415	WO 1992-JP1241	19920929
	W: US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, SE				
	JP 05088382	A2	19930409	JP 1991-250843	19910930
	EP 564655	A1	19931013	EP 1992-920384	19920929
	R: BE, CH, DE, FR, GB, IT, LI, NL, SE				
PRAI	JP 1991-250843	A	19910930		
	WO 1992-JP1241	W	19920929		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 9307540	ICM	G03G005-147
	IPCI	G03G0005-147 [ICM,5]
	IPCR	G03G0005-147 [I,A]; G03G0005-147 [I,C*]
JP 05088382	IPCI	G03G0005-05 [ICM,5]; G03G0005-147 [ICS,5]
EP 564655	IPCI	G03G0005-147 [ICM,5]
	IPCR	G03G0005-147 [I,A]; G03G0005-147 [I,C*]
	ECLA	G03G005/147D2H; G03G005/147D2F; G03G005/147D2D12

AB The title electrophotog. photoreceptor has a photoconductive layer formed  
 on a conductive substrate and coated with a protective layer prepared from a  
 composition comprising a reactive (di)pentaerythritol compound, a reactive  
 phosphazene compound and a reactive siloxane compound The photoreceptor is  
 excellent in abrasion resistance, surface smoothness, heat resistance,  
 moisture resistance and so forth.

ST electrophotog photoreceptor protective layer

IT Electrophotographic photoconductors and photoreceptors  
 (phosphazene- and urethane-containing silicone-containing acrylic protective

layer for)  
IT Phosphonitrile compounds  
RL: USES (Uses)  
(phosphazenes, electrophoretic photoreceptor surface layer containing)  
IT Phosphazene polymers  
RL: USES (Uses)  
(acrylic, and urethane-containing silicone-containing, electrophoretic  
photoreceptor surface layer containing)  
IT Siloxanes and Silicones, uses  
RL: USES (Uses)  
(di-Me, alc.-terminated, reaction product with diisocyanates, surface  
layer for electrophotog. photoreceptors from)  
IT Acrylic polymers, uses  
RL: USES (Uses)  
(phosphazene, and urethane-containing silicone-containing, electrophoretic  
photoreceptor surface layer containing)  
IT 92832-53-6D, polymer with isocyanate-containing silicones and hydroxyl  
group-containing acrylates  
RL: USES (Uses)  
(electrophoretic photoreceptor surface layer containing)  
IT 3524-68-3D, reaction product with isocyanate-containing silicone and acryloyl  
group-containing phosphazene 29570-58-9D, Dipentaerythritol hexaacrylate,  
reaction product with acryloyl-containing phosphazene, isocyanate-containing  
silicone, and hydroxy-containing acrylate 60506-81-2D, reaction product with  
acryloyl phosphazenes, hydroxy-containing acrylates, and isocyanate-containing  
silicone  
RL: USES (Uses)  
(electrophotog. photoreceptor surface layer containing)  
IT 92832-53-6P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

L9 ANSWER 36 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1994:56854 CAPLUS  
DN 120:56854  
ED Entered STN: 05 Feb 1994  
TI Emulsions of phosphazene compounds and their cured products  
IN Ando, Hiroyuki  
PA Idemitsu Petrochemical Co, Japan  
SO Jpn. Kokai Tokkyo Koho, 12 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese  
IC ICM C08F299-02  
ICS C08L085-02; C09D185-02  
CC 42-10 (Coatings, Inks, and Related Products)  
Section cross-reference(s): 29

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05222142	A2	19930831	JP 1992-27967	19920214
PRAI	JP 1992-27967		19920214		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 05222142	ICM	C08F299-02
	ICS	C08L085-02; C09D185-02
	IPCI	C08F0299-02 [ICM,5]; C08F0299-00 [ICM,5,C*]; C08L0085-02 [ICS,5]; C08L0085-00 [ICS,5,C*]; C09D0185-02 [ICS,5]; C09D0185-00 [ICS,5,C*]

AB Title emulsions with good storage stability containing curable phosphazene  
compds., emulsifying agents, and H2O are applied on substrates and cured  
to form coatings with good hardness and resistance to scratching, heat,  
and staining. Thus, an aqueous emulsion containing 1,1,3,3,5,5-  
hexa(methacryloylethylenedioxy)cyclotriphosphazene 30, Bz2O2 1, EtOH 10,

and Na alkylbenzenesulfonate 1 g was sprayed on a steel plate and dried at 150° for 20 min to form a coating showing cross-cut adhesion 100/100, pencil hardness 9H, and good resistance to staining, boiling water, and salt spraying.

ST acrylic phosphazene polymer emulsion coating;  
methacryloyloxyethylenedioxycyclotriphosphazene polymer emulsion coating;  
heat resistance phosphazene polymer coating  
IT Phosphazene polymers  
RL: TEM (Technical or engineered material use); USES (Uses)  
(acrylic, coatings, preparation of hard heat-resistant)  
IT Coating materials  
(emulsion, acrylic phosphazene polymers, with good heat resistance and hardness)  
IT 868-77-9DP, 2-Hydroxyethyl methacrylate, reaction products with hexachlorocyclotriphosphazene and sodium phenolate 25231-98-5DP, Hexachlorocyclotriphosphazene polymer, reaction products with hydroxyethyl methacrylate and sodium phenolate 26085-02-9DP, Hexachlorocyclotriphosphazene polymer, sru, reaction products with hydroxyethyl methacrylate and sodium phenolate 93891-06-6P 122564-38-9P  
RL: TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(coatings, preparation of, heat-resistant, high-hardness)  
IT 12597-69-2, Steel, uses  
RL: USES (Uses)  
(plate, coatings for, acrylic phosphazene polymers as, with good heat resistance and hardness)  
IT 92832-53-6P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)  
IT 868-77-9, 2-Hydroxyethyl methacrylate  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with hexacyclotriphosphazene)  
IT 940-71-6, Hexachlorocyclotriphosphazene  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with hydroxyethyl methacrylate)

L9 ANSWER 37 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1993:497606 CAPLUS  
DN 119:97606  
ED Entered STN: 04 Sep 1993  
TI Hydrophilized phosphazene polymer articles  
IN Hosono, Hiroshi; Kurasaki, Shoichi; Taniguchi, Takashi  
PA Toray Industries, Japan  
SO Jpn. Kokai Tokkyo Koho, 4 pp.  
CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08J007-12

ICS C09D005-00; C09K003-18

ICA C08G079-02; C09D185-02

.CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 35

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05051472	A2	19930302	JP 1991-217184	19910828
PRAI	JP 1991-217184		19910828		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 05051472	ICM	C08J007-12
	ICS	C09D005-00; C09K003-18
	ICA	C08G079-02; C09D185-02
	IPCI	C08J0007-12 [ICM,5]; C08J0007-00 [ICM,5,C*];

C09D0005-00 [ICS,5]; C09K0003-18 [ICS,5]; C08G0079-02  
[ICA,5]; C08G0079-00 [ICA,5,C\*]; C09D0185-02 [ICA,5];  
C09D0185-00 [ICA,5,C\*]

- AB Articles of polymers containing P:N units are hydrophilized by treatment with alkalis until they show water contact angle  $\leq 40^\circ$  for improved antifogging properties and scratch resistance. The polymers containing P:N units may be obtained by introducing polymerizable functional groups into polydichlorophosphazenes and polymerizing. Thus, a polycarbonate sheet was coated with a mixture of hexamethacryloyloxyethylcyclotriphosphazene, p-chlorobenzophenone, and MIBK, UV-irradiated, and immersed in 20% aqueous NaOH to give a specimen with water contact angle  $13^\circ$  and good scratch resistance and antifogging properties.
- ST phosphazene polymer hydrophilization alkali treatment; scratch resistance hydrophilic phosphazene polymer; antifogging hydrophilic phosphazene polymer
- IT Polycarbonates, miscellaneous  
RL: MSC (Miscellaneous)  
(coated with phosphazene polymers, hydrophilization of, by alkali treatment, for improved antifogging properties and scratch resistance)
- IT Phosphazene polymers  
RL: PRP (Properties)  
(hydrophilization of, with alkalis, for improved antifogging properties and scratch resistance)
- IT Alkali metal hydroxides  
RL: USES (Uses)  
(hydrophilization with, of phosphazene polymers, for improved antifogging properties and scratch resistance)
- IT Wettability  
(improvement of, of phosphazene polymers, by alkali treatment)
- IT Epoxy resins, compounds  
RL: USES (Uses)  
(acrylates, polymers with hexakis(methacryloyloxyethyl)cyclotriphosphazene and polyether (meth)acrylates, hydrophilization of, with alkali)
- IT Polyethers, uses  
RL: USES (Uses)  
(methacrylate-containing, polymers, with hexamethacryloyloxyethylcyclotriphosphazene and epoxy di(meth)acrylates, hydrophilization of, with alkalis)
- IT Epoxy resins, compounds  
RL: USES (Uses)  
(methacrylates, polymers with hexamethacryloyloxyethylcyclotriphosphazene and polyether (meth)acrylates, hydrophilization of, with alkali)
- IT 92832-53-6D, polymers with polyether (meth)acrylates and epoxy di(meth)acrylates 93891-06-6  
RL: PRP (Properties)  
(hydrophilization of, with alkali, for improved antifogging properties and scratch resistance)
- IT 1310-73-2, Sodium hydroxide, uses  
RL: USES (Uses)  
(hydrophilization with, of phosphazene polymers, for improved antifogging properties and scratch resistance)
- IT 7732-18-5  
RL: USES (Uses)  
(wettability, improvement of, of phosphazene polymers, by alkali treatment)

L9 ANSWER 38 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1993:497605 CAPLUS  
DN 119:97605  
ED Entered STN: 04 Sep 1993  
TI Coated phosphazene polymer articles  
IN Hosono, Hiroshi; Kurasaki, Shoichi; Taniguchi, Takashi  
PA Toray Industries, Japan  
SO Jpn. Kokai Tokkyo Koho, 10 pp.  
CODEN: JKXXAF



DT Patent  
LA Japanese  
IC ICM C08J007-04  
ICS C09D005-00; C09D129-04  
CC 38-3 (Plastics Fabrication and Uses)  
Section cross-reference(s): 40

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05051471	A2	19930302	JP 1991-215591	19910827
PRAI	JP 1991-215591		19910827		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 05051471	ICM	C08J007-04
	ICS	C09D005-00; C09D129-04
	IPCI	C08J0007-04 [ICM,5]; C08J0007-00 [ICM,5,C*]; C09D0005-00 [ICS,5]; C09D0129-04 [ICS,5]; C09D0129-00 [ICS,5,C*]

AB Articles containing polymers with P:N units at least on their surface are coated with a composition of poly(vinyl alc.) with saponification degree  $\geq 70$  mol% and average d.p.  $\geq 300$  and crosslinkers for durable antifogging properties. The polymers with P:N units may be obtained by introducing polymerizable functional groups to polydichlorophosphazenes and polymerizing. Thus, hexamethacryloyloxyethylcyclotriphosphazene was polymerized under UV-irradiation to give a 2 mm-thick transparent sheet, which was immersed in aqueous NaOH, water-washed, coated with a composition of aqueous poly(vinyl alc.)

(saponification degree 91.0-94.0 mol%), hydrolyzate of  $\gamma$ -glycidoxypropyltrimethoxysilane, dioxane, MeOH, dimethylimidazolidinone, Al acetylacetonate, and silicone surfactant, cured at 130°, and immersed in aqueous NaOH. The specimen showed no peeling in a cross-cut adhesion test, pencil hardness 2H, and no fogging when breathed on.

ST phosphazene polymer molding antifogging coating; polyvinyl alc crosslinker antifogging coating; siloxane polyvinyl alc antifogging coating

IT Phosphazene polymers

RL: USES (Uses)

(moldings, antifogging coatings for, poly(vinyl alc.) and silane crosslinkers as)

IT Polycarbonates, miscellaneous

RL: MSC (Miscellaneous)

(phosphazene polymer-coated, antifogging coatings for, poly(vinyl alc.) and silane crosslinkers as)

IT Antifogging agents

(coatings, poly(vinyl alc.) and silane crosslinkers, for phosphazene polymers)

IT Siloxanes and Silicones, compounds

RL: USES (Uses)

(polymers, with poly(vinyl alc.), antifogging coatings for phosphazene polymers)

IT 9002-89-5D, Poly(vinyl alcohol), polymers with silane hydrolyzates

RL: USES (Uses)

(coatings, antifogging, for phosphazene polymer moldings)

IT 92832-53-6P

RL: PREP (Preparation)

(preparation of, crosslinked, antifogging coatings for, poly(vinyl alc.) and silane crosslinkers as)

L9 ANSWER 39 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1993:40920 CAPLUS

DN 118:40920

ED Entered STN: 03 Feb 1993

TI Phosphorus polymer coatings

IN Yaguchi, Atsunori

PA Idemitsu Petrochemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C09D007-12

ICS C09D185-02; C09D201-00

CC 42-10 (Coatings, Inks, and Related Products)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 04132772	A2	19920507	JP 1990-255558	19900925
PRAI	JP 1990-255558		19900925		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 04132772	ICM	C09D007-12
	ICS	C09D185-02; C09D201-00
	IPCI	C09D0007-12 [ICM,5]; C09D0185-02 [ICS,5]; C09D0185-00 [ICS,5,C*]; C09D0201-00 [ICS,5]

AB Title coatings, coatable on various substrates contain good solvents (e.g. ketones, aromatic hydrocarbons, glycol ethers or esters) and poor solvents (e.g. alcs., aliphatic hydrocarbons). Thus, a UV-curable composition containing MIBK

3, PhMe 2, MeOH 3, benzophenone 0.50 and 1,1,3,3,5,5-hexa(methacryloyl ethylenedioxy)cyclotriphosphazene (from 2-hydroxyethyl methacrylate and hexachlorocyclotriphosphazene) 10 g showed good adhesion to polycarbonate, cellulose, urethane rubber, acrylic styrene polymer or acrylic polymer sheets and gave abrasion-resistant films.

ST acrylic phosphazene polymer coating solvent

IT Polycarbonates, uses

Rubber, urethane, uses

RL: USES (Uses)

(coatings for, UV-curable acrylic phosphazenes in good-poor solvents as)

IT Coating materials

(abrasion-resistant, UV-curable, phosphazene methacrylates in good-poor solvent blends, for plastics or rubbers)

IT Phosphazene polymers

RL: TEM (Technical or engineered material use); USES (Uses)

(cyclo-, methacrylic, coatings, in good-poor solvent blends, for plastics or rubbers)

IT 100-42-5D, Styrene, polymers with acrylic compds. 9004-36-8, CAB

9004-39-1, Cellulose acetate propionate

RL: USES (Uses)

(coatings for, UV-curable acrylic phosphazenes in good-poor solvents as)

IT 93891-06-6

RL: TEM (Technical or engineered material use); USES (Uses)

(coatings, UV-cured, for plastics or rubbers)

IT 16526-96-8,  $\alpha$ -Hydroxyethyl methacrylate

RL: USES (Uses)

(condensation of, with hexachlorotriphosphazene)

IT 940-71-6, Hexachlorocyclotriphosphazene

RL: USES (Uses)

(condensation of, with hydroxyethyl methacrylate)

IT 92832-53-6P

RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(preparation and polymerization of, for coating)

L9 ANSWER 40 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1992:614567 CAPLUS

DN 117:214567

ED Entered STN: 28 Nov 1992

TI The characteristics of cyclic phosphazene and its applications for hard coatings

AU Yaguchi, A.; Mori, S.; Kitayama, M.; Onda, T.; Kurahashi, A.; Ando, H.  
 CS Planning Dev. Dep., Idemitsu Petrochem. Co. Ltd., Tokyo, 100, Japan  
 SO Thin Solid Films (1992), 216(1), 123-5  
 CODEN: THSFAP; ISSN: 0040-6090  
 DT Journal  
 LA English  
 CC 42-10 (Coatings, Inks, and Related Products)  
 AB Hexachlorocyclotriphosphazene is condensed with 2-hydroxyethyl  
 methacrylate, and the adduct is then polymerized with UV light. The  
 properties of the resulting coating are presented. The coating has  
 extreme hardness as well as heat, chemical, and stain resistance and is  
 suitable for use as a hard coating for wood or PVC floor tiles.  
 ST phosphazene polymethacrylate crosslinked coating property; PVC wood  
 coating polyphosphazene polymethacrylate  
 IT Tiles  
 (floor, PVC, coatings for, UV-curable polyphosphazene polymethacrylates  
 as)  
 IT Coating materials  
 (photocurable, phosphazene polymethacrylates, preparation and properties of,  
 for wood and PVC floor tiles)  
 IT 93891-06-6P  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material  
 use); PREP (Preparation); USES (Uses)  
 (coatings, UV-curable, preparation and properties of)  
 IT 9002-86-2  
 RL: DEV (Device component use); USES (Uses)  
 (floor tiles from, UV-curable coatings for, polyphosphazene  
 polymethacrylates as)  
 IT 92832-53-6P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and polymerization of)  
 IT 868-77-9  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with hexachlorocyclotriphosphazene)  
 IT 940-71-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with hydroxyethyl methacrylate)

L9 ANSWER 41 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1992:501021 CAPLUS  
 DN 117:101021  
 ED Entered STN: 05 Sep 1992  
 TI Photosensitive composition for heat-resistant pattern formation  
 IN Tani, Motoaki; Horikoshi, Eiji; Watanabe, Isao  
 PA Fujitsu Ltd., Japan  
 SO Eur. Pat. Appl., 23 pp.  
 CODEN: EPXXDW

DT Patent  
 LA English  
 IC ICM G03F007-037  
 CC 74-4 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 Section cross-reference(s): 76

FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	EP 453237	A2	19911023	EP 1991-303379	19910416
	EP 453237	A3	19920930		
	EP 453237	B1	19981209		
	R: DE, FR, GB				
	JP 04018450	A2	19920122	JP 1990-279088	19901019
	JP 2980359	B2	19991122		
PRAI	JP 1990-99788	A	19900416		
	JP 1990-279088	A	19901019		

## CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 453237	ICM	G03F007-037
	IPCI	G03F0007-037 [ICM,5]; G03F0007-032 [ICM,5,C*]
	IPCR	G03F0007-032 [I,C*]; G03F0007-037 [I,A]; H05K0003-00 [I,A]; H05K0003-00 [I,C*]; H05K0003-38 [N,A]; H05K0003-38 [N,C*]; H05K0003-46 [N,A]; H05K0003-46 [N,C*]
JP 04018450	ECLA	G03F007/037; H05K003/00K3F
	IPCI	C08L0079-08 [ICM,5]; C08L0079-00 [ICM,5,C*]; C08G0073-10 [ICS,5]; C08G0073-00 [ICS,5,C*]; C09D0004-02 [ICS,5]; C09D0179-08 [ICS,5]; C09D0179-00 [ICS,5,C*]

AB A photosensitive composition for forming heat-resistant resin patterns for use in the production of elec. circuit boards and semiconductor devices comprises a varnish of a polyimide or polybismaleimide precursor, a polymerizable monomer or oligomer compatible with the varnish and capable of providing a heat-resistant resin upon polymerization, and a photosensitive polymerization initiator,

wherein the monomer or oligomer is selected from a group consisting of acrylic acid and methacrylic compds., compds. having  $\geq 2$  functional groups and isocyanurate structures, phosphazenic compds., and compds. having acryloyl and methacryloyl groups at terminals and/or side chains.

ST photosensitive compn heat resistant pattern

IT Semiconductor devices

(photopolymerizable compns. containing polyimide precursors and acrylic monomers for production of heat-resistant resin patterns for production of)

IT Polyimides, uses

RL: USES (Uses)

(precursors, photopolymerizable compns. containing acrylic monomers and, for production of heat-resistant resin patterns for manufacture of

semiconductor

devices)

IT Photoimaging compositions and processes

(photopolymerizable, containing polyimide precursors, acrylic monomers, and photoinitiators for heat-resistant resin pattern production)

IT Electric circuits

(printed, boards, photopolymerizable compns. containing polyimide precursors and acrylic monomers for production of heat-resistant resin patterns for production of)

IT 9043-05-4

RL: USES (Uses)

(photopolymerizable compns. containing acrylic monomers and, for production

of

heat-resistant resin patterns for manufacture of semiconductor devices)

IT 94-36-0, Benzoyl peroxide, uses 103-01-5, N-Phenylglycine 119-61-9,

Benzophenone, uses 6652-28-4, Isopropyl benzoin ether 7473-98-5

12176-31-7 15774-82-0, 2-Methylthioxanthone 24504-22-1 24650-42-8

77473-08-6, 3,3',4,4'-Tetra(tert-butylperoxycarbonyl)benzophenone

RL: USES (Uses)

(photopolymerizable compns. containing polyimide precursors and acrylic monomers and, for heat-resistant resin pattern formation in manufacture of semiconductor devices)

IT 106-90-1, Glycidyl acrylate 108-80-5, Isocyanuric acid 3524-68-3,

Pentaerythritol triacrylate 15625-89-5, Trimethylolpropane triacrylate

29570-58-9, Dipentaerythritol hexaacrylate 40220-08-4 92832-53-6

142875-50-1 142875-51-2

RL: USES (Uses)

(photopolymerizable compns. containing polyimide precursors and, for

production

of heat-resistant resin patterns for production of semiconductor devices)

DN 117:100917  
ED Entered STN: 05 Sep 1992  
TI Electrophotographic photosensitive member  
IN Kurahashi, Akihiko; Kageyama, Akira  
PA Idemitsu Petrochemical Co., Ltd., Japan  
SO Eur. Pat. Appl., 20 pp.

CODEN: EPXXDW

DT Patent  
LA English  
IC ICM G03G005-147  
ICS G03G005-05

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 28

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 443626	A2	19910828	EP 1991-102697	19910223
	EP 443626	A3	19920429		
	R: BE, CH, DE, FR, GB, IT, LI, NL, SE				
	JP 03246553	A2	19911101	JP 1990-44007	19900223
PRAI	JP 1990-44007	A	19900223		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 443626	ICM	G03G005-147
	ICS	G03G005-05
	IPCI	G03G0005-147 [ICM,5]; G03G0005-05 [ICS,5]
	IPCR	C07F0009-00 [I,C*]; C07F0009-6593 [I,A]; G03G0005-05 [I,A]; G03G0005-05 [I,C*]; G03G0005-147 [I,A]; G03G0005-147 [I,C*]
JP 03246553	IPCI	G03G0005-147 [ICM,5]

AB An electrophotog. photosensitive member has an electroconductive support, a photoconductive layer, and a protective layer composed of a cured resin of a curable phosphazene compound as the outermost layer or the surface of the photoconductive layer is composed of the curable phosphazene compound. The electrophotog. photosensitive member has a high surface hardness, is excellent in durability, and provides stable images without any distortion.

ST electrophotog photoconductor phosphazene surface

IT Electrophotographic photoconductors and photoreceptors  
(with surface layers containing cured phosphazene compds.)

IT 92832-53-6P 142996-07-4P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation and use of, in surface layers of electrophotog.  
photoconductors)

L9 ANSWER 43 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1992:409964 CAPLUS

DN 117:9964

ED Entered STN: 11 Jul 1992

TI Curable phosphazene compositions and photochromic products

IN Kurahashi, Akihiko

PA Idemitsu Petrochemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08L085-02

ICS C09K009-02

CC 42-10 (Coatings, Inks, and Related Products)  
Section cross-reference(s): 74

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 04025564 A2 19920129 JP 1990-130396 19900522  
PRAI JP 1990-130396 19900522

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 04025564	ICM	C08L085-02
	ICS	C09K009-02
	IPCI	C08L0085-02 [ICM,5]; C08L0085-00 [ICM,5,C*]; C09K0009-02 [ICS,5]
AB	The title compns. forming photochromic coatings with good surface hardness and adhesion comprise curable phosphazenes [N:PAaBb]n (A = curable group; B = noncurable group; a + b = 2; n = 3-18) and organic photochromic compds. Thus, a polycarbonate plate was sprayed with a composition containing cyclic [N:P(OC2H4OCOCMe:CH2)2]3 25, 1-hydroxycyclohexyl Ph ketone 1, spironaphthoxazine 1, and solvents 50 g and irradiated by UV to form a photochromic coating with pencil hardness 7H and good cross-cut adhesion.	
ST	phosphazene curable coating photochromic; adhesion coating phosphazene polymer photochromic; hardness coating phosphazene polymer photochromic	
IT	Phosphazene polymers RL: USES (Uses) (acrylic, coatings, containing photochromic compds., with good adhesion and hardness)	
IT	Photochromic substances (spironaphthoxazines, phosphazene polymer coatings containing)	
IT	Coating materials (photochromic, curable phosphazene-based, with good adhesion and hardness)	
IT	92832-53-6P RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent) (preparation and polymerization of)	
IT	93891-06-6P RL: PREP (Preparation) (preparation of, coatings, containing photochromic compds., with good adhesion and hardness)	
IT	868-77-9, 2-Hydroxyethyl methacrylate RL: RCT (Reactant); RACT (Reactant or reagent) (reaction of, with hexachlorocyclotriphosphazene)	
IT	940-71-6, Hexachlorocyclotriphosphazene RL: RCT (Reactant); RACT (Reactant or reagent) (reaction of, with hydroxyethyl methacrylate)	

L9 ANSWER 44 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1992:49025 CAPLUS

DN 116:49025

ED Entered STN: 08 Feb 1992

TI Reversible thermal recording media with protective layer containing triazatriphosphorines

IN Suzuki, Masayasu; Iida, Tsutomu; Aoyama, Koichi

PA Tomoegawa Paper Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM B41M005-36

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 03180390	A2	19910806	JP 1989-318787	19891211
JP 04048352	B4	19920806		
PRAI JP 1989-318787		19891211		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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JP 03180390 ICM B41M005-36  
 IPCI B41M0005-36 [ICM,5]  
 AB The title media are prepared by forming a heat-sensitive layer containing a low mol. weight organic compound dispersed in a high mol. weight organic compound, of which the transparency is reversibly changed by heating, on a colored support and subsequently forming a protective layer containing mainly a thermally hardenable triazatriphosphorine. The media provide high contrast images which can be erased by heating, and show good durability in repeated use. Thus, a carbon black-colored polyester film was coated with a recording layer containing behenic acid and VYHH (vinyl acetate-vinyl chloride copolymer) and with a protective layer containing cyclic compound [NP(OC2H4OCOCMe:CH2)2]3 and Al(OH)3 and irradiated with an electron beam to give a thermal recording film.  
 ST reversible thermal recording medium; phosphagene protective layer thermal recording  
 IT Printing, nonimpact  
 (thermal, materials for, reversible, with triazatriphosphorine protective layer)  
 IT 112-85-6, Behenic acid 9003-22-9, VYHH  
 RL: USES (Uses)  
 (reversible thermal recording material using)  
 IT 7251-15-2 21645-51-2, Aluminum hydroxide, uses 92832-53-6 138495-70-2  
 RL: USES (Uses)  
 (reversible thermal recording medium protective layer using)

L9 ANSWER 45 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1991:208825 CAPLUS  
 DN 114:208825  
 ED Entered STN: 31 May 1991  
 TI Manufacture and uses of phosphazene-coated styrene-based resin composites  
 IN Yaguchi, Atsunori; Funaki, Keisuke  
 PA Idemitsu Petrochemical Co., Ltd., Japan  
 SO Eur. Pat. Appl., 26 pp.  
 CODEN: EPXXDW

DT Patent  
 LA English  
 IC ICM C08J007-04  
 ICS C09D185-02; B41J031-05; G11B005-702; G11B005-71  
 ICI C08L025-06  
 CC 38-3 (Plastics Fabrication and Uses)  
 Section cross-reference(s): 42, 75, 77

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 376021	A2	19900704	EP 1989-122644	19891208
	EP 376021	A3	19911106		
	EP 376021	B1	19960424		
	R: BE, CH, DE, FR, GB, IT, LI, NL, SE				
	JP 02162038	A2	19900621	JP 1988-316168	19881216
	JP 07077790	B4	19950823		
	JP 02162083	A2	19900621	JP 1988-316169	19881216
	JP 2733078	B2	19980330		
	US 5082717	A	19920121	US 1989-443937	19891130
	CA 2005675	AA	19900616	CA 1989-2005675	19891215
PRAI	JP 1988-316168	A	19881216		
	JP 1988-316169	A	19881216		
	JP 1989-19497	A	19890131		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 376021	ICM	C08J007-04
	ICS	C09D185-02; B41J031-05; G11B005-702; G11B005-71

	ICI	C08L025-06
	IPCI	C08J0007-04 [ICM,5]; C08J0007-00 [ICM,5,C*]; C09D0185-02 [ICS,5]; C09D0185-00 [ICS,5,C*]; B41J0031-05 [ICS,5]; G11B0005-702 [ICS,5]; G11B0005-71 [ICS,5]; C08L0025-06 [ICI,5]; C08L0025-00 [ICI,5,C*]
	IPCR	C07F0009-00 [I,C*]; C07F0009-6581 [I,A]; C08J0007-00 [I,C*]; C08J0007-04 [I,A]; G11B0005-62 [I,C*]; G11B0005-702 [I,A]; G11B0005-702 [I,C*]; G11B0005-72 [I,C*]; G11B0005-725 [I,A]; G11B0005-73 [I,A]; G11B0005-735 [I,A]
	ECLA	C07F009/6581F2; C08J007/04L85+L25/06; G11B005/702; G11B005/702C; G11B005/702E; G11B005/725; G11B005/73B; G11B005/735
JP 02162038	IPCI	B32B0027-30 [ICM,5]; B05D0007-02 [ICS,5]; B05D0007-24 [ICS,5]; B32B0027-16 [ICS,5]; B32B0027-28 [ICS,5]; C08F0112-00 [ICS,5]
JP 02162083	IPCI	B41J0031-00 [ICM,5]; C08F0012-08 [ICS,5]; C08F0012-00 [ICS,5,C*]
	ECLA	C07F009/6581F2; C08J007/04L85+L25/06; G11B005/702; G11B005/702C; G11B005/702E; G11B005/725; G11B005/73B; G11B005/735
US 5082717	IPCI	B32B0027-28 [ICM,5]; C08J0007-04 [ICS,5]; C08J0007-00 [ICS,5,C*]; B41J0031-05 [ICS,5]; C09D0185-02 [ICS,5]; C09D0185-00 [ICS,5,C*]
	IPCR	C07F0009-00 [I,C*]; C07F0009-6581 [I,A]; C08J0007-00 [I,C*]; C08J0007-04 [I,A]; G11B0005-62 [I,C*]; G11B0005-702 [I,A]; G11B0005-702 [I,C*]; G11B0005-72 [I,C*]; G11B0005-725 [I,A]; G11B0005-73 [I,A]; G11B0005-735 [I,A]
	NCL	428/207.000; 428/412.000; 428/419.000; 428/421.000; 428/447.000; 428/480.000; 428/494.000; 428/495.000; 428/516.000; 428/518.000; 428/521.000; 428/843.000; 428/900.000; 526/160.000; 528/168.000
CA 2005675	IPCI	C08J0007-04; C08J0007-00 [C*]
	IPCR	C07F0009-00 [I,C*]; C07F0009-6581 [I,A]; C08J0007-00 [I,C*]; C08J0007-04 [I,A]; G11B0005-62 [I,C*]; G11B0005-702 [I,A]; G11B0005-702 [I,C*]; G11B0005-72 [I,C*]; G11B0005-725 [I,A]; G11B0005-73 [I,A]; G11B0005-735 [I,A]
AB	A styrene (I)-based resin composite, which comprises a I-based polymer having a syndiotactic configuration or its composition coated with a curable heat-resistant phosphazene resin is prepared The composite material, in which a hard coating having high hardness and adhesiveness is formed on the surface of the I-based resin molding material, is useful in magnetic recordings, electronics and other applications. Thus, polystyrene (II) having a syndiotactic configuration, was prepared by polymn of I in the presence of cyclopentadienyltitanium trichloride and methylaluminoxane catalysts, and subsequent solvent extraction II was mixed with a phosphite and a phenolic antioxidants, extruded, pelletized, extruded into a sheet, stretched to a d. 1.04 and crystallinity 12%, biaxially drawn at 120° and annealed at 250° to give a film 200-mm thick. Then, 1,1,3,3,5,5-hexa(methacryloyl ethylenedioxy)cyclotriphosphazene was mixed with a 1:1 iso-PrOH-MeCOEt blend to a viscosity 10 cP, mixed with 10-hydroxycyclohexyl Ph ketone photoinitiator, coated onto II molding material and cured by UV radiation to give a coated film having a thickness 6-μm, Taber abrasion 8%, and sand abrasion 12%, compared with Taber abrasion 38% and sand abrasion 46% for a similar II without the curable phosphazene coating.	
ST	polystyrene composite polyphosphazene coating manuf; syndiotactic polystyrene curable phosphazene coating; magnetic recording film	
IT	polystyrene composite; UV curable phosphazene coating composite	
IT	Coating materials (phosphazene polymers, UV-curable, for styrene-based resin composites, abrasion-resistant)	
IT	Heat-resistant materials	



(styrene-based resin-phosphazene polymer composites as)

IT Recording materials  
(magnetic, styrene-based resin-phosphazene coating composites as,  
abrasion-resistant)

IT 92832-53-6  
RL: USES (Uses)  
(UV-curable, coatings, for styrene-based resin composites,  
abrasion-resistant)

IT 24937-78-8, Ethylene-vinylacetate copolymer  
RL: USES (Uses)  
(binders, for inks, for styrene-based resin composites)

IT 28325-75-9P, Syndiotactic polystyrene  
RL: PREP (Preparation)  
(composites with curable phosphazene polymer coatings, preparation and uses  
of)

L9 ANSWER 46 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1991:187671 CAPLUS  
DN 114:187671  
ED Entered STN: 17 May 1991  
TI Curable acrylic resin compositions and coated products  
IN Ando, Hiroyuki; Kurahashi, Akihiko  
PA Idemitsu Petrochemical Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 10 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese  
IC ICM C08F020-36  
ICS B32B027-30; C08G018-67; C09D004-00; C09D175-14  
ICA C08F299-06  
CC 42-7 (Coatings, Inks, and Related Products)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 02284904	A2	19901122	JP 1989-107983	19890426
PRAI	JP 1989-107983		19890426		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 02284904	ICM	C08F020-36
	ICS	B32B027-30; C08G018-67; C09D004-00; C09D175-14
	ICA	C08F299-06
	IPCI	C08F0020-36 [ICM,5]; C08F0020-00 [ICM,5,C*]; B32B0027-30 [ICS,5]; C08G0018-67 [ICS,5]; C08G0018-00 [ICS,5,C*]; C09D0004-00 [ICS,5]; C09D0175-14 [ICS,5]; C08F0299-06 [ICA,5]; C08F0299-00 [ICA,5,C*]

AB The title compns., useful in ink ribbons for magnetic recording, thermal-transfer recording, etc., contain prepolymers of compds. containing  $\geq 3$  (meth)acryloyl groups and  $\geq 1$  active H, isocyanates, and optionally curable phosphazenes. Substrates are coated with the compns. and cured to prepare coated products with reduced tack and good chalking and scratching resistance. Thus, 50 parts 4:6 dipentaerythritol pentaacrylate-dipentaerythritol hexaacrylate mixture was treated with 4.5 parts PhNCO and mixed with 50 parts hexakis(methacryloylethylenedioxy)cyclotriphosphazene to give title composition. Then, a polyester sheet was coated with a mixture containing the composition 30, MIBK 30, BuOH 20, Me<sub>2</sub>CHOH 20, and 1-hydroxycyclohexyl Ph ketone 1 g and irradiated by UV to form a tack-free coating with no chalking.

ST curable acrylic resin coating tackfree; photocurable coating acrylic polymer; phosphazene curable blend acrylic coating; scratch resistance coating acrylic polymer; chalking resistance coating acrylic polymer

IT Coating materials  
(curable, acrylic, with reduced tack and good chalking resistance)

IT Coating materials  
(photocurable, acrylic, with reduced tack and good chalking resistance)

IT 103-71-9D, Phenyl isocyanate, reaction products with (di)pentaerythritol acrylates 3524-68-3D, Pentaerythritol triacrylate, reaction products with isocyanates 4074-88-8, Diethylene glycol diacrylate 26471-62-5D, TDI, reaction products with (di)pentaerythritol acrylates 29570-58-9, Dipentaerythritol hexaacrylate 60506-81-2D, Dipentaerythritol pentaacrylate, reaction products with isocyanates 92832-53-6  
 RL: USES (Uses)  
 (curable acrylic resin compns. containing, for tack-free coatings)

L9 ANSWER 47 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1990:613404 CAPLUS  
 DN 113:213404  
 ED Entered STN: 08 Dec 1990  
 TI Fiber-reinforced curable phosphazene molding materials and cured products  
 IN Kurahashi, Akihiko  
 PA Idemitsu Petrochemical Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C08L085-02  
 ICS C08J005-24; C08K007-02; C08L101-00  
 ICI C08L085-00  
 CC 37-6 (Plastics Manufacture and Processing).  
 Section cross-reference(s): 38

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 02199174	A2	19900807	JP 1989-18526	19890127
PRAI	JP 1989-18526		19890127		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 02199174	ICM	C08L085-02
	ICS	C08J005-24; C08K007-02; C08L101-00
	ICI	C08L085-00
	IPCI	C08L0085-02 [ICM,5]; C08J0005-24 [ICS,5]; C08K0007-02 [ICS,5]; C08K0007-00 [ICS,5,C*]; C08L0101-00 [ICS,5]; C08L0085-00 [ICI,5]

AB The title materials and products with good mech. strength, surface appearance, hardness, dimensional stability, chemical resistance, etc., comprise curable phosphazene compds. and fibrous materials. Thus, treating 116 g hexachlorocyclotriphosphazene with 400 g 2-hydroxyethyl methacrylate in pyridine-toluene mixture containing hydroquinone at 60° for 6 h gave 300 g 1,1,3,3,5,5-hexakis(methacryloyloxyethoxy)cyclotriphosphazene (I). Then, 12 glass cloths were impregnated with I containing 3 parts Bz2O2, stacked, and hot pressed at 120° for 2 h to give a plate with tensile strength 29 kg/mm2, bending strength 35 kg/mm2, Rockwell hardness M 121, and good resistance to aqueous HCl, aqueous NaOH,

Me2CO,

and PhCl, vs. 28, 8.4, M 121, and good, resp., for the plate manufactured without glass cloth.

ST glass fiber reinforced phosphazene molding; curable phosphazene molding mech strength; chem resistance curable phosphazene molding

IT Carbon fibers, uses and miscellaneous

RL: USES (Uses)

(cloth, composites with phosphazene polymers, with good mech. strength and chemical resistance)

IT Phosphazene polymers

RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (moldings, fiber-reinforced, with good mech. strength and chemical resistance)

IT Chemically resistant materials

(phosphazene polymers, fiber-reinforced, manufacture of)

IT Polyamide fibers, uses and miscellaneous

RL: USES (Uses)  
 (aramid, composites with phosphazene polymers, Kevlar 49, with good mech. strength and chemical resistance)

IT Glass fibers, uses and miscellaneous  
 RL: USES (Uses)  
 (textiles, composites with phosphazene polymers, with good mech. strength and chemical resistance)

IT 7440-44-0  
 RL: USES (Uses)  
 (carbon fibers, cloth, composites with phosphazene polymers, with good mech. strength and chemical resistance)

IT 24938-64-5, p-Phenylenediamine-terephthalic acid copolymer, sru  
 25035-37-4, p-Phenylenediamine-terephthalic acid copolymer  
 RL: USES (Uses)  
 (fibers, composites with phosphazene polymers, with good mech. strength and chemical resistance)

IT 92832-53-6P  
 RL: PEP (Physical, engineering or chemical process); PREP (Preparation); PROC (Process)  
 (preparation and polymerization of)

IT 93891-06-6P  
 RL: PREP (Preparation)  
 (preparation of, fiber-reinforced, with good mech. strength and chemical resistance)

IT 868-77-9, 2-Hydroxyethyl methacrylate  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with hexachlorocyclotriphosphazene)

IT 940-71-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with hydroxyethyl methacrylate)

L9 ANSWER 48 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1990:554438 CAPLUS  
 DN 113:154438  
 ED Entered STN: 27 Oct 1990  
 TI Phosphazene compound compositions for curable coatings  
 IN Yaguchi, Atsunori  
 PA Idemitsu Kosan Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C08L085-02  
 CC 42-10 (Coatings, Inks, and Related Products)  
 Section cross-reference(s): 38

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 02129263	A2	19900517	JP 1988-283059	19881109
PRAI	JP 1988-283059		19881109		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 02129263	ICM	C08L085-02
	IPCI	C08L0085-02 [ICM,5]; C08L0085-00 [ICM,5,C*]

AB Title compns., useful for 10-1000  $\mu$ m coating layers, comprise curable phosphazene compound, monomer and/or prepolymer. A composition, prepared from

a mixture of A compound prepared from 0.167 mol hexachlorocyclotriphosphazene and 1.1 mol 2-hydroxyethyl methacrylate (I) 20, I 20, MIBK 20, BuOH 10, PhMe 20, 1-hydroxycyclohexylphenyl ketone 2 g, was coated onto polyester fibers and irradiated with UV to give a 70  $\mu$ m layer having pencil hardness 9 H with good flexibility.

ST hexachlorocyclotriphosphazene deriv copolymer coating flexible;  
 hydroxyethyl methacrylate phosphazene copolymer coating flexible

IT Coating materials  
 (phosphazene derivative copolymers, hard and flexible)  
 IT 75-89-8DP, 2,2,2-Trifluoroethanol, reaction product with  
 hexachlorocyclotriphosphazene and hydroxyethyl methacrylate 868-77-9DP,  
 2-Hydroxyethyl methacrylate, reaction product with  
 hexachlorocyclotriphosphazene 924-42-5DP, N-Methylol acrylamide,  
 reaction product with hexachlorocyclotriphosphazene, hydroxyethyl  
 methacrylate, and trifluoroethanol 940-71-6DP, reaction product with  
 hydroxyethyl methacrylate 15625-89-5DP, Trimethylolpropane triacrylate,  
 reaction product with hexachlorocyclotriphosphazene, hydroxyethyl  
 methacrylate, and trifluoroethanol 92832-53-6P  
 RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and polymerization of, for hard and flexible coating)  
 IT 129844-86-6P 129869-78-9P 129869-79-0P  
 RL: PREP (Preparation)  
 (preparation of, for hard and flexible coating)

L9 ANSWER 49 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1990:498757 CAPLUS  
 DN 113:98757  
 ED Entered STN: 16 Sep 1990  
 TI Phosphazene compositions as antioxidants for magnetic powders  
 IN Yaguchi, Atsunori  
 PA Idemitsu Petrochemical Co., Ltd., Japan  
 SO Jpn. Kokai Tokyo Koho, 9 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C23F011-167  
 ICS C01B021-072  
 ICA B22F001-02  
 CC 37-6 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 55, 56, 57, 77  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 02047281	A2	19900216	JP 1988-197172	19880809
PRAI	JP 1988-197172		19880809		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 02047281	ICM	C23F011-167
	ICS	C01B021-072
	ICA	B22F001-02
	IPCI	C23F0011-167 [ICM,5]; C23F0011-10 [ICM,5,C*]; C01B0021-072 [ICS,5]; C01B0021-00 [ICS,5,C*]; B22F0001-02 [ICA,5]

AB Title compns., i.e. (NP)-bearing crosslinkable groups and optional  
 uncrosslinkable groups and having d.p.  $\geq 3$  are useful for  
 formulation with powdered transition metals and/or their compds. for prolonged  
 stability. Thus, 1,1,3,3,5,5-hexa(methacryloylethylenedioxy)cyclotriphosp  
 hazene was prepared in a dispersion with powdered Fe for magnetic coating.

ST magnetic coating stabilizer acrylic phosphazene; antioxidant acrylic  
 phosphazene magnetic powder

IT Antioxidants

(for magnetic powders, preparation of acrylic phosphazene compns. as)

IT Magnetic substances

(transition metals, preparation of crosslinkable phosphazene compns. as  
 antioxidants for)

IT 1309-37-1P, Iron(III) oxide, preparation 7439-89-6P, Iron, preparation  
 24304-00-5P, Aluminum nitride

RL: PREP (Preparation)

(preparation of acrylic phosphazene compns. as antioxidants for)

IT 92832-53-6P 93891-06-6P

RL: PREP (Preparation)

(preparation of, as stabilizers for magnetic powders)  
 IT 940-71-6, Hexachlorocyclotriphosphazene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with hydroxyethyl methacrylate)

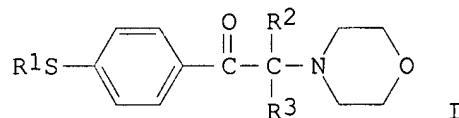
L9 ANSWER 50 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1990:236079 CAPLUS  
 DN 112:236079  
 ED Entered STN: 23 Jun 1990  
 TI Manufacture of hard transparent resins  
 IN Yaguchi, Atsunori  
 PA Idemitsu Petrochemical Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C08G079-02  
 CC 35-7 (Chemistry of Synthetic High Polymers)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 01315423	A2	19891220	JP 1988-146810	19880616
	JP 06053803	B4	19940720		
PRAI	JP 1988-146810		19880616		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 01315423	ICM	C08G079-02
	IPCI	C08G0079-02 [ICM,4]; C08G0079-00 [ICM,4,C*]

GI



AB The resins, useful for optical materials, are manufactured by irradiating curable phosphazene compds. with actinic radiation in the presence of a morpholine derivative as photoinitiator. The morpholine derivative may be I (R1-R3 = H, C1-8 alkyl, C6-10 aryl, allyl, C2-8 alkenyl, C1-8 hydroxyalkyl, C1-8 mercaptoalkoxyalkyl). Thus, a mixture of 30 g 1,1,3,3,5,5-hexakis(methacryloyloxyethoxy)cyclotriphosphazene and 0.9 g Irgacure 907 was UV-irradiated to give a product with pencil hardness  $\geq 9H$ , vs. 2B for an injection-molded specimen from a com. polycarbonate.

ST acrylic phosphazene polymer transparency hardness; morpholine photoinitiator acryloyl phosphazene polymn

IT Transparent materials

(acrylic phosphazene polymers, hard)

IT Phosphazene polymers

RL: USES (Uses)

(acrylic, manufacture of, by radiation-induced polymerization)

IT Polymerization catalysts

(photochem., morpholine derivs., for acrylic phosphazenes)

IT Polymerization

(photochem., of hexakis(methacryloyloxyethoxy)cyclotriphosphazene)

IT 868-77-9

RL: USES (Uses)

(condensation of, with hexachlorocyclotriphosphazene)

IT 940-71-6

RL: USES (Uses)

(condensation of, with hydroxyethyl methacrylate)

IT 71867-90-8 71868-10-5, 2-Methyl-1-[4-(methylthio)phenyl]-2-morpholino-1-propanone 88324-57-6 88324-59-8 104856-52-2 127303-97-3  
127408-91-7 127408-92-8 127408-93-9  
RL: USES (Uses)  
(photoinitiator, for polymerization of acrylic phosphazenes)

IT 92832-53-6P  
RL: PREP (Preparation)  
(preparation of)

L9 ANSWER 51 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1990:181607 CAPLUS

DN 112:181607

ED Entered STN: 12 May 1990

TI Abrasion- and weather-resistant labels or signs

IN Yaguchi, Atsunori

PA Idemitsu Petrochemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM E01F009-00

ICS G09F007-00

ICA C09D003-49

CC 42-10 (Coatings, Inks, and Related Products)

Section cross-reference(s): 43, 55

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 01256609	A2	19891013	JP 1988-84879	19880406
PRAI	JP 1988-84879		19880406		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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JP 01256609	ICM	E01F009-00
	ICS	G09F007-00
	ICA	C09D003-49
	IPCI	E01F0009-00 [ICM,4]; G09F0007-00 [ICS,4]; C09D0003-49 [ICA,4]

AB The title labels or signs are coated with cured phosphazenes. Spraying plastic, steel, or plywood with an iso-BuCOMe solution of initiator and 1,1,3,3,5,5-hexakis[(methacryloyloxy)ethoxy]cyclotriphosphazene and irradiating with UV gave products resisting abrasion, heat, acids, alkalis, hot water, and weathering.

ST abrasion resistance coating cyclophosphazene; plastic coating abrasion resistance; metal coating abrasion resistance; label coating abrasion resistance; wood coating abrasion resistance

IT Labels

Signs

Polycarbonates, uses and miscellaneous

RL: USES (Uses)

(abrasion resistant cyclotriphosphazene methacrylate coatings for)

IT Acrylic polymers, uses and miscellaneous

Polyesters, uses and miscellaneous

RL: USES (Uses)

(abrasion-resistant cyclotriphosphazene methacrylate coatings for)

IT Coating materials

(abrasion-resistant, photocurable, cyclophosphazene methacrylates, for labels or signs)

IT 9011-14-7, PMMA 25038-59-9, PET (polymer), uses and miscellaneous

RL: USES (Uses)

(abrasion resistant cyclotriphosphazene methacrylate coatings for)

IT 92832-53-6

RL: TEM (Technical or engineered material use); USES (Uses)

(coatings, abrasion-and weather-resistant, for signs or labels)

L9 ANSWER 52 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1990:159133 CAPLUS  
 DN 112:159133  
 ED Entered STN: 28 Apr 1990  
 TI Manufacture of curable phosphazene compounds containing (meth)acrylate groups  
 IN Kitayama, Masahiro; Tsubokawa, Masaya; Yaguchi, Atsunori  
 PA Idemitsu Petrochemical Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 4 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C08G079-02  
 ICS C08G079-02  
 CC 35-2 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 28

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 01236241	A2	19890921	JP 1988-60586	19880316
PRAI	JP 1988-60586		19880316		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 01236241	ICM	C08G079-02
	ICS	C08G079-02
	IPCI	C08G0079-02 [ICM,4]; C08G0079-02 [ICS,4]; C08G0079-00 [ICS,4,C*]

AB Cl-free title compds., giving cured products with excellent transparency, hardness, and heat resistance and useful for coatings, lenses, magnetic recording materials, etc., are prepared by the reaction of Cl-containing phosphazenes with polyol monoalkali metal salts and treatment of the resulting OH-containing phosphazene compds. with (meth)acrylic acid (or acid halide). A solution of hexachlorocyclotriphosphazene in toluene was added slowly to a solution of NaOCH<sub>2</sub>CH<sub>2</sub>OH in EtOH and refluxed to give 97% hexakis(2-hydroxyethoxy)cyclotriphosphazene (I) which (83.6 g) was treated with 116 g H<sub>2</sub>C:CM<sub>2</sub>COCl in Et<sub>2</sub>O containing PhNMe<sub>2</sub> at reflux for 2 h to give 129 g Cl-free hexakis(2-methacryloyloxyethoxy)cyclotriphosphazene.

ST phosphazene methacryloyloxyethyl cyclic prepn;  
 methacryloyloxyethylphosphazene cyclic prepn; acryloyloxyethylphosphazene cyclic prepn; hydroxyethylphosphazene methacrylate cyclic prepn

IT Monomers

Vinyl compounds, preparation

RL: PREP (Preparation)

((methacryloyloxyethoxy) (methacryloyloxytrifluoroethoxy)phosphazenes, preparation of)

IT Phosphonitrile compounds

RL: PREP (Preparation)

(phosphazenes, (meth)acryloyloxyethoxy and (meth)acryloyloxytrifluoroethoxy derivs., preparation of polymerizable)

IT 920-46-7, Methacryloyl chloride

RL: RCT (Reactant); RACT (Reactant or reagent)

(esterification of, with (hydroxyethyl)phosphazenes)

IT 96435-30-2P

RL: PREP (Preparation)

(preparation and esterification with (meth)acryloyl chloride)

IT 75-89-8DP, 2,2,2-Trifluoroethanol, etherification products with hexachlorocyclotriphosphazene and ethanediol, methacrylate esters 79-41-4DP, esters with (hydroxyethoxy) (hydroxytrifluoroethoxy) cyclotriphosphazenes 940-71-6DP, etherification products with trifluoroethanol and ethanediol, methacrylate esters 7388-28-5DP, Ethylene glycol monosodium salt, etherification products with hexachlorocyclotriphosphazene and trifluoroethanol, methacrylate esters 92832-53-6P

RL: PREP (Preparation)

(preparation of polymerizable)

L9 ANSWER 53 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1990:158642 CAPLUS  
 DN 112:158642  
 ED Entered STN: 28 Apr 1990  
 TI Preparation of hardenable chlorine-free phosphazene compounds  
 IN Kurahashi, Akihiko; Mori, Shigeo  
 PA Idemitsu Petrochemical Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C07F009-02  
 ICS A61K006-08; C07F009-22  
 ICA C08F030-02  
 CC 29-7 (Organometallic and Organometalloidal Compounds)  
 Section cross-reference(s): 35

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 01246292	A2	19891002	JP 1988-70886	19880326
PRAI	JP 1988-70886		19880326		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 01246292	ICM	C07F009-02
	ICS	A61K006-08; C07F009-22
	ICA	C08F030-02
	IPCI	C07F0009-02 [ICM,4]; A61K0006-08 [ICS,4]; A61K0006-02 [ICS,4,C*]; C07F0009-22 [ICS,4]; C07F0009-00 [ICS,4,C*]; C08F0030-02 [ICA,4]; C08F0030-00 [ICA,4,C*]

AB The title compds., containing practically no Cl, are prepared by treatment of phosphazene compds. having P-Cl bonds with organic halides having an OH or NH<sub>2</sub> group, followed by treatment with (meth)acryloyl compds. ClCH<sub>2</sub>CH<sub>2</sub>OH (254 g) was added dropwise to a solution of 174 g hexachlorocyclotriphosphazene in pyridine/1,4-dioxane and the reaction mixture was stirred at 60° for 6 h to give 288 g hexa(2-chloroethoxy)cyclotriphosphazene (I). A dioxane solution of 102 g I was added dropwise to a mixture of 137 g CH<sub>2</sub>:CMeCO<sub>2</sub>K, Bu<sub>4</sub>NBr, and dioxane and the reaction mixture was stirred at 80° for 4 h to give 141 g hexa(2-methacryloyloxyethoxy)cyclotriphosphazene.

ST phosphazene compd prepn monomer; chlorocyclotriphosphazene condensation ethylene chlorohydrin; chloroethanol condensation chlorocyclotriphosphazene; chloroethoxycyclotriphosphazene acyloxylation methacrylate; cyclotriphosphazene methacryloyloxyethoxy prepn monomer

IT Phosphazene polymers

RL: RCT (Reactant); RACT (Reactant or reagent)  
 ((meth)acryloyloxy-containing phosphazenes as monomers for)

IT 940-71-6, Hexachlorocyclotriphosphazene

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (condensation of, with ethylene chlorohydrin,  
 (chloroethoxy)cyclotriphosphazene from)

IT 107-07-3, Ethylene chlorohydrin, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (condensation of, with hexachlorocyclotriphosphazene,  
 (chloroethoxy)cyclotriphosphazene from)

IT 79-41-4, Methacrylic acid, reactions 6900-35-2, Potassium methacrylate

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (esterification with, of (chloroethoxy)cyclotriphosphazene,  
 (methacryloyloxyethoxy)cyclotriphosphazene from)

IT 29364-58-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and esterification of, with methacrylic acid (salt),  
 (methacryloyloxyethoxy)cyclotriphosphazene from)



IT 92832-53-6P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, as monomer)

L9 ANSWER 54 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1990:120262 CAPLUS  
DN 112:120262  
ED Entered STN: 31 Mar 1990  
TI Phosphazene-containing polymer composites for printed circuit boards  
IN Mori, Shigeo; Yaguchi, Atsunori  
PA Idemitsu Petrochemical Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 8 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM H05K001-03  
ICA B32B015-08; C08G079-02; C08J005-24  
CC 38-3 (Plastics Fabrication and Uses)  
Section cross-reference(s): 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 01207986	A2	19890821	JP 1988-33375	19880216
PRAI	JP 1988-33375		19880216		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 01207986	ICM	H05K001-03
	ICA	B32B015-08; C08G079-02; C08J005-24
	IPCI	H05K0001-03 [ICM,4]; B32B0015-08 [ICA,4]; C08G0079-02 [ICA,4]; C08G0079-00 [ICA,4,C*]; C08J0005-24 [ICA,4]

AB Strong but flexible title boards are manufactured by coating and/or impregnating substrates with curable phosphazene compds. (NPR1R2)n, ( $\geq 1$  of R1-2 = polymerizable group;  $n \geq 3$ ), then curing. Thus, hexachlorocyclotriphosphazene and 2-hydroxyethyl methacrylate were dissolved in benzene containing hydroquinone and pyridine and heated to give 1,1,3,3,5,5-hexa(methacryloyloxyethoxy)cyclotriphosphazene, which was dissolved in MEK with benzophenone (photoinitiator). Kraft paper 0.207 mm thick was impregnated with the solution, dried, and irradiated with UV lamps on both sides to give a composite showing tensile strength 21.7 kg/15 mm, vs. 4.7 for the untreated paper.

ST crosslinked phosphazene polymer circuit board;  
methacryloyloxyethoxycyclotriphosphazene composite printed circuit board;  
printed circuit board vinylphosphazene polymer; paper curable phosphazene polymer impregnated; tensile strength printed circuit board;  
polyphosphazene crosslinked reinforced circuit board

IT Phosphazene polymers

RL: USES (Uses)

(crosslinked, reinforced, for strong flexible printed circuit boards)

IT Polyamide fibers, uses and miscellaneous

RL: USES (Uses)

(polymerized phosphazene compds. reinforced with, for printed circuit boards)

IT Paper

(ceramic, alumina, polymerized phosphazene compds. reinforced with, for printed circuit boards)

IT Paper

(kraft, polymerized phosphazene compds. reinforced with, for printed circuit boards)

IT Polymers, uses and miscellaneous

RL: USES (Uses)

(phosphazene group-containing, crosslinked, reinforced, for strong flexible printed circuit boards)

IT Electric circuits

(printed, boards, flexible, reinforced polymers of phosphazene)

compds., with high strength)

IT Glass fibers, uses and miscellaneous  
 RL: USES (Uses)  
 (textiles, polymerized phosphazene compds. reinforced with, for printed circuit boards)

IT 868-77-9, 2-Hydroxyethyl methacrylate  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (dehydrochlorination of, with hexachlorocyclotriphosphazene)

IT 940-71-6, Hexachlorocyclotriphosphazene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (dehydrochlorination of, with hydroxyethyl methacrylate)

IT 1344-28-1, Aluminum oxide (Al<sub>2</sub>O<sub>3</sub>), uses and miscellaneous  
 RL: USES (Uses)  
 (paper, polymerized phosphazene compds. reinforced with, for printed circuit boards)

IT 92832-53-6P  
 RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and polymerization of)

IT 93891-06-6P  
 RL: PREP (Preparation)  
 (preparation of, reinforced, for strong flexible printed circuit boards)

L9 ANSWER 55 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1990:45697 CAPLUS  
 DN 112:45697  
 ED Entered STN: 04 Feb 1990  
 TI Durable patterning member useful in printed circuit fabrication  
 IN Mori, Shigeo; Yaguchi, Atsunori  
 PA Idemitsu Petrochemical Co., Ltd., Japan  
 SO PCT Int. Appl., 39 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 IC ICM G03F001-00  
 ICS H01L021-30  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 8901650	A1	19890223	WO 1988-JP546	19880606
	W: KR, US				
	RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				
	JP 01052155	A2	19890228	JP 1987-199636	19870810
	JP 07007207	B4	19950130		
	EP 328648	A1	19890823	EP 1988-904670	19880606
	R: BE, CH, DE, FR, GB, IT, LI, NL, SE				
	US 5051295	A	19910924	US 1989-360935	19890317
PRAI	JP 1987-199636	A	19870810		
	JP 1987-119926	A1	19870516		
	WO 1988-JP546	W	19880606		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 8901650	ICM	G03F001-00
	ICS	H01L021-30
	IPCI	G03F0001-00 [ICM,4]; H01L0021-30 [ICS,4]; H01L0021-02 [ICS,4,C*]
	IPCR	G03F0001-14 [I,A]; G03F0001-14 [I,C*]
JP 01052155	IPCI	G03F0001-00 [ICM,4]; H01L0021-30 [ICS,4]; H01L0021-02 [ICS,4,C*]; H05K0003-00 [ICS,4]
	ECLA	G03F001/00
EP 328648	IPCI	G03F0001-00 [ICM,4]; H01L0021-30 [ICS,4]; H01L0021-02 [ICS,4,C*]

US 5051295 IPCR G03F0001-14 [I,A]; G03F0001-14 [I,C\*]  
 IPCI B32B0009-04 [ICM,5]; H01L0021-00 [ICS,5]  
 IPCR G03F0001-14 [I,A]; G03F0001-14 [I,C\*]  
 NCL 428/195.100; 428/064.100; 428/076.000; 428/201.000;  
 428/203.000; 428/204.000; 428/209.000; 428/411.100;  
 428/520.000; 428/704.000; 428/835.600; 428/901.000;  
 428/913.000; 430/003.000; 430/004.000; 430/005.000;  
 430/006.000; 430/007.000; 430/320.000; 430/321.000

AB The invention provides a durable patterning member (photomask, lith film) having a protective film consisting of a cured product of a curable compound having excellent mech., optical and chemical properties and the member is used for patterning in the fabrication of ICs, printed circuits, hybrid ICs, etc.

ST photomask protective film; lith film protective layer; protective film photomask

IT Semiconductor devices  
 (photomasks for fabrication of)

IT Photomasks  
 (protective films for)

IT Electric circuits  
 (integrated, photomasks for fabrication of)

IT 92832-53-6 124365-46-4, Tosguard 520 124365-49-7, Uni-DIC 17-827  
 RL: USES (Uses)  
 (protective coating, for photomasks)

L9 ANSWER 56 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1989:633778 CAPLUS  
 DN 111:233778  
 ED Entered STN: 23 Dec 1989  
 TI Heat-resistant polymers prepared from [(4'-(2-vinyl)-4-biphenyl)oxy]pentachlorocyclotriphosphazene  
 AU Inoue, Kenzo; Nakamura, Hajime; Ariyoshi, Satoru; Takagi, Masataka; Tanigaki, Teiichi  
 CS Fac. Eng., Ehime Univ., Matsuyama, 790, Japan  
 SO Macromolecules (1989), 22(12), 4466-9  
 CODEN: MAMOBX; ISSN: 0024-9297  
 DT Journal  
 LA English  
 CC 35-4 (Chemistry of Synthetic High Polymers)  
 AB The radical-initiated copolymn. of [(4-(2-vinyl)-4-biphenyl)oxy]pentachlorocyclotriphosphazene (I) with styrene or Me methacrylate in 1,2-dichloroethane and the thermal behavior of their copolymers were investigated. The copolymers were enriched in I with respect to the monomer feed. The comparison of Alfrey-Price parameters of I with those of 4-hydroxy-4'-vinylbiphenyl suggested that the phosphazene ring in I acts only as an electron-withdrawing group. The thermogravimetric anal. indicated that incorporation of I in the copolymers leads to increased thermal stability. The copolymers containing >50 mol % I afforded 56-65% char yields at 800° in air or N.

ST vinylbiphenyloxy pentachlorocyclotriphosphazene copolymer

IT Heat-resistant materials  
 (((vinyl)biphenyl)oxy]pentachlorocyclotriphosphazene copolymers, preparation of)

IT Glass temperature and transition  
 (of (((vinyl)biphenyl)oxy]pentachlorocyclotriphosphazene copolymers)

IT Q-e value in polymerization  
 Reactivity ratio in polymerization  
 (of (((vinyl)biphenyl)oxy]pentachlorocyclotriphosphazene with styrene or Me methacrylate)

IT 115529-67-4  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (polymerization of, with Me methacrylate or styrene, reactivity ratio and values in)

Q-e

IT 80-62-6, Methyl methacrylate 100-42-5, Styrene, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (polymerization of, with  
 [(vinyl)biphenyl]oxy]pentachlorocyclotriphosphazene,  
 reactivity ratio and Q-e values in)  
 IT 122847-48-7P 122847-49-8P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and heat resistance of)

L9 ANSWER 57 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1989:596099 CAPLUS  
 DN 111:196099  
 ED Entered STN: 25 Nov 1989  
 TI Cyclic polyphosphazene group-containing crosslinked acrylic plastics for  
 lenses  
 IN Kitayama, Masahiro; Mori, Shigeo  
 PA Idemitsu Petrochemical Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 9 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C08G079-02  
 ICS C08G079-02  
 CC 37-6 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 38

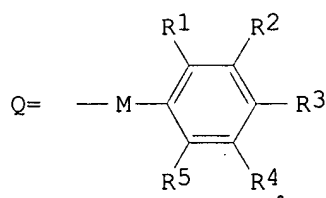
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 01074230	A2	19890320	JP 1987-230951	19870917
PRAI	JP 1987-230951		19870917		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 01074230	ICM	C08G079-02
	ICS	C08G079-02
	IPCI	C08G0079-02 [ICM,4]; C08G0079-02 [ICS,4]; C08G0079-00 [ICS,4,C*]

GI



AB Hard, lightwt., solvent-resistant title plastics with high refractive index (n) are manufactured by curing compns. of (preferably cyclic) phosphazenes having  $\geq 3$  repeating units NPAA<sub>a</sub>B<sub>b</sub> [A = polymerizable/crosslinkable group; B = Q; M = O, S, NH; R1-5 = H, halogen, Cl-4 (halo)alkyl; a + b = 2], optionally other monomers, and inorg. particles including some  $\leq 200$   $\mu\text{m}$  in size, with  $n \geq 1.6$ . Thus, 290 g hexachlorocyclotriphosphazene was treated with 716 g 2-hydroxyethyl methacrylate in C<sub>6</sub>H<sub>6</sub> in the presence of pyridine to give 640 g [NP(OC<sub>2</sub>H<sub>4</sub>O<sub>2</sub>CCMeCH<sub>2</sub>)<sub>2</sub>]<sub>3</sub> with  $n$  1.50, 90 g of which was mixed with 10 g TiO<sub>2</sub> (particle size 8-15  $\mu\text{m}$ ) and 0.27 g 2,2-diethoxyacetophenone, degassed, then cured with UV irradiation to give a transparent plastic with good resistance to Me<sub>2</sub>CO, MeOH, and C<sub>6</sub>H<sub>6</sub>,  $n$  1.60, transparency 90.2%, pencil hardness 6H, and heat distortion temperature 170-190°, vs. poor solvent resistance, 1.78, 3H, and 75-100° for poly(Me methacrylate) containing TiO<sub>2</sub>.

ST phosphazene contg acrylic plastic lens; glass substitute polyphosphazene crosslinked plastic; solvent resistant polyphosphazene crosslinked plastic; scratch resistant polyphosphazene crosslinked plastic

IT Lenses  
(cyclic phosphazene group-containing acrylic polymers for, containing inorg. particles, with high refractive index and hardness)

IT Heat-resistant materials  
(abrasion- and chemical resistant, transparent, cyclic phosphazene group-containing acrylic polymers, containing inorg. particles, with high refractive index)

IT Transparent materials  
(abrasion- and chemical- and heat-resistant, cyclic phosphazene group-containing acrylic polymers, containing inorg. particles, with high refractive index)

IT Chemically resistant materials  
(abrasion- and heat-resistant, transparent, cyclic phosphazene group-containing acrylic polymers, containing inorg. particles, with high refractive index)

IT Abrasion-resistant materials  
(chemical- and heat-resistant, transparent, cyclic phosphazene group-containing acrylic polymers, containing inorg. particles, with high refractive index)

IT Polymers, preparation  
RL: PREP (Preparation)  
(phosphazene group-containing, manufacture of, containing inorg. particles, with high refractive index, for lenses)

IT Phosphazene polymers  
RL: USES (Uses)  
(unsatd., vinyl-crosslinked, containing inorg. particles, with high refractive index, for lenses)

IT 13463-67-7P, Titanium oxide (TiO<sub>2</sub>), preparation 1312-43-2, Indium oxide (In<sub>2</sub>O<sub>3</sub>) 1314-36-9, Yttrium oxide, uses and miscellaneous  
RL: PREP (Preparation)  
(cyclic triphosphazene group-containing acrylic polymers containing, with high refractive index)

IT 93891-06-6P 123416-41-1P 123416-42-2P  
RL: PREP (Preparation)  
(manufacture of, containing inorg. particles with high refractive index, for lenses)

IT 92832-53-6P 123416-30-8P 123416-31-9P  
RL: PEP (Physical, engineering or chemical process); PREP (Preparation); PROC (Process)  
(preparation and polymerization of)

IT 868-77-9  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with hexachlorocyclotriphosphazene)

IT 7003-65-8 35535-81-0  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with hexachlorocyclotriphosphazene and hydroxyethyl methacrylate)

IT 940-71-6, Hexachlorocyclotriphosphazene  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with hydroxyethyl methacrylate)

L9 ANSWER 58 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1989:596098 CAPLUS  
DN 111:196098  
ED Entered STN: 25 Nov 1989  
TI Polymerizable phosphazene compound compositions for lenses  
IN Kitayama, Masahiro; Mori, Shigeo  
PA Idemitsu Petrochemical Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 9 pp.  
CODEN: JKXXAF

DT Patent  
 LA Japanese  
 IC ICM C08G079-02  
 ICS C08G079-02  
 CC 37-6 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 38

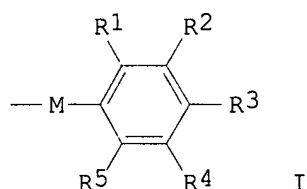
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 01074229	A2	19890320	JP 1987-230950	19870917
PRAI	JP 1987-230950		19870917		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 01074229	ICM	C08G079-02
	ICS	C08G079-02
	IPCI	C08G0079-02 [ICM,4]; C08G0079-02 [ICS,4]; C08G0079-00 [ICS,4,C*]

GI



AB Molding compns. which can be cured with radical initiators to form hard, heat- and solvent-resistant transparent plastics with high refractive index (n) useful as lightwt. glass substitutes, comprise (preferably cyclic) polyphosphazenes having  $\geq 3$  repeating units NPAaBb [A = polymerizable/crosslinkable group; B = Q; R1-5 = H, halogen, C1-4 (halo)alkyl; M = O, S, NH; a + b = 2] and inorg. particles including some  $\leq 200$   $\mu\text{m}$  in size, with  $n \geq 1.6$ . Thus, 290 g hexachlorocyclotriphosphazene and 716 g 2-hydroxyethyl methacrylate were combined in C6H6 containing pyridine to give 640 g [NP(OC2H4O2CCMeCH2)2]3 with  $n$  1.50, 90 g of which was mixed with 10 g TiO2 (particle size 8-15  $\mu\text{m}$ ,  $n$  2.5). The composition was mixed with 0.27 g 2,2-diethoxyacetophenone, degassed, then cured by UV irradiation to give a transparent plastic with good resistance to Me2CO, MeOH, and C6H6,  $n$  1.60, transparency 90.2%, pencil hardness 6H, and heat distortion temperature 170-190°, vs. poor solvent resistance, 1.77, 87.2%, 3H, and 75-100° for poly(Me methacrylate) containing TiO2.

ST phosphazene compd unsatd polymerizable molding; lens crosslinked polyphosphazene molding compn; scratch resistant polyphosphazene molding compn; solvent resistant polyphosphazene molding compn

IT Lenses

(phosphazene group-containing polymers, containing inorg. particles, with high refractive index, molding compns. for)

IT Heat-resistant materials

(abrasion- and chemical resistant, transparent, phosphazene group-containing polymers, containing inorg. particles, with high refractive index, molding compns. for)

IT Transparent materials

(abrasion- and chemical- and heat-resistant, phosphazene group-containing polymers, containing inorg. particles, with high refractive index, molding compns. for)

IT Chemically resistant materials

(abrasion- and heat-resistant, transparent, phosphazene group-containing polymers, containing inorg. particles, with high refractive index, molding

compns. for)

IT Abrasion-resistant materials  
(chemical- and heat-resistant, transparent, phosphazene group-containing polymers, containing inorg. particles, with high refractive index, molding compns. for)

IT Polymers, preparation  
RL: PREP (Preparation)  
(phosphazene group-containing, manufacture of, containing inorg. particles, for lenses, molding compns. for)

IT Phosphazene polymers  
RL: USES (Uses)  
(unsatd., crosslinked, containing inorg. particles, for lenses, molding compns. for)

IT 1312-43-2, Indium oxide (In<sub>2</sub>O<sub>3</sub>) 1314-36-9, Yttrium oxide, uses and miscellaneous 13463-67-7, Titanium oxide (TiO<sub>2</sub>), uses and miscellaneous  
RL: USES (Uses)  
(cyclotriphosphazene-containing crosslinked acrylic polymers containing, for lenses, molding compns. for)

IT 93891-06-6P 123416-41-1P 123416-42-2P  
RL: PREP (Preparation)  
(manufacture of, containing inorg. particles, for lenses, molding compns. for)

IT 92832-53-6P 123416-30-8P 123416-31-9P  
RL: PEP (Physical, engineering or chemical process); PREP (Preparation); PROC (Process)  
(preparation and polymerization of)

IT 868-77-9 7003-65-8 35535-81-0  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with hexachlorocyclotriphosphazene)

IT 940-71-6, Hexachlorocyclotriphosphazene  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with hydroxyethyl methacrylate)

L9 ANSWER 59 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1989:574827 CAPLUS

DN 111:174827

ED Entered STN: 10 Nov 1989

TI Manufacture of polymerizable phosphazenes

IN Mori, Shigeo; Kitayama, Masahiro

PA Idemitsu Petrochemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08G079-02

ICS C08G079-02

CC 35-2 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 28

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 01087636	A2	19890331	JP 1987-243003	19870928
PRAI	JP 1987-243003		19870928		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 01087636	ICM	C08G079-02
	ICS	C08G079-02
	IPCI	C08G0079-02 [ICM,4]; C08G0079-02 [ICS,4]; C08G0079-00 [ICS,4,C*]

AB Phosphazenes giving cured products with good heat resistance and mech. properties are manufactured by treating chlorophosphazene polymers unsatd. alcs. and, optionally, unpolymerizable alcs. in the presence of bicyclic heterocyclic bases as dehydrochlorinating agents. A solution of 477 g

2-hydroxyethyl methacrylate and 559 g DBU in DMF was treated dropwise with 193 g hexachlorocyclotriphosphazene and stirred at 60° for 8 h to give hexakis[(methacryloyloxy)ethyl]cyclotriphosphazene.

ST phosphazene monomer prepn; methacrylate cyclotriphosphazene deriv; hydroxyethyl methacrylate reaction chlorophosphazene; hexachlorocyclotriphosphazene reaction alc

IT Substitution reaction catalysts  
(bicycloheterocyclic amines, for chlorophosphazenes by unsatd. alcs.)

IT 6674-22-2, DBU  
RL: CAT (Catalyst use); USES (Uses)  
(catalyst, for etherification of chlorophosphazenes by unsatd. alcs.)

IT 75-89-8DP, 2,2,2-Trifluoroethanol, reaction products with hydroxyethyl methacrylate and hexachlorocyclotriphosphazene 7251-15-2P 92832-53-6P  
RL: PREP (Preparation)  
(preparation of)

IT 868-77-9, 2-Hydroxyethyl methacrylate  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with cyclotriphosphazenes)

IT 107-18-6, Allyl alcohol, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with hexachlorocyclotriphosphazene)

IT 940-71-6, Hexachlorocyclotriphosphazene  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with unsatd. alcs.)

L9 ANSWER 60 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1989:574826 CAPLUS

DN 111:174826

ED Entered STN: 10 Nov 1989

TI Manufacture of polymerizable phosphazenes

IN Mori, Shigeo; Kitayama, Masahiro

PA Idemitsu Petrochemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08G079-02

ICS C08G079-02

CC 35-2 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 28

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 01087635	A2	19890331	JP 1987-243001	19870928
PRAI	JP 1987-243001		19870928		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 01087635	ICM	C08G079-02
	ICS	C08G079-02
	IPCI	C08G0079-02 [ICM,4]; C08G0079-02 [ICS,4]; C08G0079-00 [ICS,4,C*]

AB Phosphazenes giving cured products with good heat resistance and mech. properties are manufactured by treating chlorophosphazene polymers with unsatd. alcs. and, optionally, unpolymerizable alcs. in the presence of metal halides. A solution of 477 g 2-hydroxyethyl methacrylate and 20.4 g ZnCl<sub>2</sub> in DMF was treated dropwise with 193 g hexachlorocyclotriphosphazene and stirred at 60° for 8 h to give hexakis[(methacryloyloxy)ethoxy]cyclotriphosphazene.

ST phosphazene monomer prepn; methacrylate cyclotriphosphazene deriv; hydroxyethyl methacrylate reaction chlorophosphazene; hexachlorocyclotriphosphazene reaction alc unsatd; catalyst substitution chlorophosphazene; zinc chloride catalyst substitution

IT Chlorides, uses and miscellaneous



RL: CAT (Catalyst use); USES (Uses)  
 (catalyst, for reaction of chlorophosphazenes with unsatd. alcs.)  
 IT Substitution reaction catalysts  
 (metal halides, for chlorophosphazenes with unsatd. alcs.)  
 IT 1344-13-4, Tin chloride (unspecified) 7646-85-7, Zinc chloride, uses and  
 miscellaneous 7758-89-6, Cuprous chloride  
 RL: CAT (Catalyst use); USES (Uses)  
 (catalyst, for reaction of chlorophosphazenes with unsatd. alcs.)  
 IT 75-89-8DP, 2,2,2-Trifluoroethanol, reaction products with hydroxyethyl  
 methacrylate and hexachlorocyclotriphosphazene 7251-15-2P  
 92832-53-6P  
 RL: PREP (Preparation)  
 (preparation of, catalysts for)  
 IT 107-18-6, Allyl alcohol, reactions 868-77-9, 2-Hydroxyethyl methacrylate  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with hexachlorocyclotriphosphazene, catalysts for)  
 IT 940-71-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with unsatd. alcs., catalysts for)

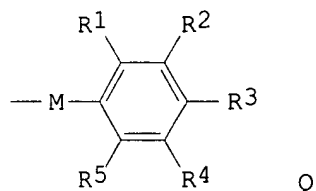
L9 ANSWER 61 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1989:478839 CAPLUS  
 DN 111:78839  
 ED Entered STN: 03 Sep 1989  
 TI Polymers of aryl vinyl phosphazenes for optical equipment  
 IN Mori, Shigeo; Kitayama, Masahiro  
 PA Idemitsu Petrochemical Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C08G079-02  
 CC 35-4 (Chemistry of Synthetic High Polymers)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 01014240	A2	19890118	JP 1987-168381	19870706
PRAI	JP 1987-168381		19870706		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 01014240	ICM	C08G079-02
	IPCI	C08G0079-02 [ICM,4]; C08G0079-00 [ICM,4,C*]

GI



AB Hard, transparent title polymers with high refractive index, useful for lenses, etc., are prepared from (preferably cyclic) phosphazenes having  $\geq 3$  repeating units NPAB (A = polymerizable group; B = aromatic group Q; R1-5 = H, Cl, Br, C1-4 haloalkyl; M = O, S, imino), and optionally other monomers. Thus, 121.2 g thiophenol was treated with 23 g Na, then mixed with 115.9 g hexachlorocyclotriphosphazene and 143 g 2-hydroxyethyl methacrylate in the presence of pyridine and hydroquinone at 50°

for 27 h to give a product, which was mixed with 0.1% benzoin iso-Pr ether, poured into a mold, and exposed to UV radiation to give a polymer plate having light transmission 90%, n 1.62, and pencil hardness 4H.

ST phosphazene aryl vinyl deriv polymer; acrylic polymer phosphazene contg transparent; cyclic phosphazene contg vinyl polymer; cyclotriphosphazene contg vinyl polymer lens; glass substitute polyvinyl aryl phosphazene; refractive index polyvinyl aryl phosphazene

IT Transparent materials  
(phosphazene-containing vinyl polymers, with high refractive index and hardness)

IT Phosphonitrile compounds  
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(cyclic, phosphazenes, preparation and polymerization of, for optical applications)

IT Polymers, preparation  
RL: PREP (Preparation)  
(phosphazene group-containing, preparation of, with high refractive index and hardness, for optical apparatus)

IT 940-71-6, Hexachlorocyclotriphosphazene  
RL: USES (Uses)  
(condensation of, with (thio)phenolates and unsatd. alcs. or amines)

IT 868-77-9  
RL: USES (Uses)  
(condensation of, with hexachlorocyclotriphosphazene and (thio)phenolates)

IT 930-69-8, Sodium thiophenolate 2666-53-7  
RL: USES (Uses)  
(condensation of, with hexachlorocyclotriphosphazene and hydroxyethyl methacrylate)

IT 92832-53-6P 122108-26-3P 122108-27-4P  
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and polymerization of)

IT 93891-06-6P 122108-70-7P 122141-87-1P  
RL: PREP (Preparation)  
(preparation of, transparent, for lenses)

L9 ANSWER 62 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1989:441464 CAPLUS

DN 111:41464

ED Entered STN: 05 Aug 1989

TI Curable phosphazene polymers for coatings with good abrasion, alkali, heat and weather resistance

IN Mori, Shigeo; Yaguchi, Atsunori; Kitayama, Masahiro

PA Idemitsu Petrochemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 16 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C09D003-49

ICA C08G079-02

CC 42-10 (Coatings, Inks, and Related Products)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 63241075	A2	19881006	JP 1987-152772	19870618
PRAI	JP 1986-282784	A1	19861126		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 63241075	ICM	C09D003-49
	ICA	C08G079-02
	IPCI	C09D0003-49 [ICM,4]; C08G0079-02 [ICA,4]; C08G0079-00 [ICA,4,C*]
	IPCR	C08G0079-00 [I,C*]; C08G0079-02 [I,A]

AB The coatings contain phosphazene compds. (NPR1aR2b)<sub>n</sub> (R1 = double bond-containing group; R2 = double bond-containing group, residues of OH- or NH2-containing compds.; a > 0; b ≥ 0; a + b = 2; n ≥ 3) and/or fillers. A solution from 1,1,3,3,5,5-hexakis(methacryloylethylenedioxy)cyclo triphosphazene (from 2-hydroxyethyl methacrylate and hexachlorocyclotriphosphazene) 4.00, MIBK 2.75, iso-BuOH 2.75, and 1-hydroxycyclohexyl Ph ketone 0.12 g was coated on a polycarbonate plate and UV-irradiated to give a film showing good abrasion, weather, heat, and alkali resistance.

ST phosphazene resin coating alkali resistance; abrasion resistance curable phosphazene coating; heat resistance curable phosphazene coating; weather resistance curable phosphazene coating

IT Coating materials  
(abrasion- and alkali- and heat- and weather-resistant, curable phosphazene resins)

IT 7631-86-9, Silica, uses and miscellaneous  
RL: USES (Uses)  
(colloidal, curable phosphazene resins containing, for coatings with abrasion, alkali, heat and weather resistance)

IT 139-02-6, Sodium phenolate 2923-18-4 33374-41-3, Potassium allyl alcoholate 121462-09-7  
RL: USES (Uses)  
(condensation of, with halophosphazenes, for curable oligomers)

IT 868-77-9  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(dehydrohalogenation of, with halophosphazenes, for curable oligomers, for coatings)

IT 940-71-6, Hexachlorocyclotriphosphazene 2950-45-0, Octachlorocyclotetraphosphazene  
RL: USES (Uses)  
(dehydrohalogenation or condensation of, for curable oligomers, for coatings)

IT 291-37-2DP, 1,3,5,2,4,6-Triazatriphosphorine, allylphenoxy derivs. 7251-15-2P 92832-53-6P 115524-07-7P  
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and polymerization of)

L9 ANSWER 63 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1989:425033 CAPLUS

DN 111:25033

ED Entered STN: 21 Jul 1989

TI Cured phosphazines for optical decorations

IN Hosoya, Ikuo

PA Idemitsu Petrochemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM F21V005-06

ICS B44C005-08; C08J007-18; F21S001-02; F21V003-04

CC 42-10 (Coatings, Inks, and Related Products)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 63266703	A2	19881102	JP 1987-101328	19870424
	JP 07031924	B4	19950410		
PRAI	JP 1987-101328		19870424		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
• JP 63266703	ICM	F21V005-06
	ICS	B44C005-08; C08J007-18; F21S001-02; F21V003-04
	IPCI	F21V0005-06 [ICM,4]; F21V0005-00 [ICM,4,C*]; B44C0005-08 [ICS,4]; B44C0005-00 [ICS,4,C*]; C08J0007-18 [ICS,4]; C08J0007-00 [ICS,4,C*];

F21S0001-02 [ICS,4]; F21V0003-04 [ICS,4]; F21V0003-00 [ICS,4,C\*]  
 IPCR B44C0005-00 [I,C\*]; B44C0005-08 [I,A]; C08J0007-00 [I,C\*]; C08J0007-18 [I,A]; F21V0003-00 [I,C\*]; F21V0003-04 [I,A]; F21V0005-00 [I,C\*]; F21V0005-06 [I,A]

AB Optical decorations such as chandeliers and stained glass contain hardened phosphazine surfaces. Soaking polycarbonate-made chandelier parts in a solution of 1,1,3,3,5,5-hexa(methacryloylethylenedioxy)cyclotriphosphazene (from hexachlorocyclotriphosphazene and 2-hydroxyethyl methacrylate) 4.00, iso-BuCOME 2.75, iso-BuOH 2.75, and an initiator 0.12 part, heating to 80° to remove the solvents, and irradiating with 370-nm UV gave products, which when assembled give a chandelier having an appearance comparable to a glass chandelier but having 1/5 the weight of a glass chandelier.

ST phosphazine acrylic coating polycarbonate chandelier; stained glass acrylic phosphazine coating

IT Lamps  
 (chandeliers, polycarbonate moldings, acrylic phosphazine coatings for)

IT Glass, oxide  
 RL: USES (Uses)  
 (stained, acrylic phosphazine coatings for)

IT 93891-06-6  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (coatings, on polycarbonate moldings, for chandeliers)

IT 92832-53-6P  
 RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and polymerization of, as coatings for optical decorations)

IT 868-77-9, 2-Hydroxyethyl methacrylate  
 RL: USES (Uses)  
 (reaction with chlorocyclotriphosphazene, for coatings)

IT 940-71-6  
 RL: USES (Uses)  
 (reaction with hydroxyethyl methacrylate, for coatings)

L9 ANSWER 64 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1987:412858 CAPLUS  
 DN 107:12858  
 ED Entered STN: 11 Jul 1987  
 TI A study on crown and bridge resin using PNC-EMA monomer  
 AU Anzai, Misaki; Hoya, Ken; Toriyama, Fumito; Ide, Kozo; Kikuchi, Hisaji; Hirose, Hideharu; Yuda, Masashi; Ohashi, Masayoshi  
 CS Sch. Dent., Nihon Univ., Japan  
 SO Journal of Nihon University School of Dentistry (1986), 28(4), 240-8  
 CODEN: JNUDAT; ISSN: 0029-0432  
 DT Journal  
 LA English  
 CC 63-7 (Pharmaceuticals)

AB The properties of polymer resins for crowns and bridges using a new PNC-EMA monomer [P3N3(OCH2CH2O2CCCH3:CH2)6], mixed with monomers currently available on the market (14-70% weight) and poly(Me methacrylate) (PMMA) as the polymer base, were studied. Both the compressive strength and hardness increased with an increasing amts. of PNC-EMA monomer. Water sorption reached 1.86 mg/cm2 when the amount of PNC-EMA mixed was 28%. The degree of abrasion decreased in accordance with an increase in the amount of PNC-EMA showing a value one-third that of PMMA when mixed in a proportion of 70%.

ST PNC EMA dental bridge crown; methacryloxyethylenedioxy cyclotriphosphazene dental polymer; cyclotriphosphazene methacryloxyethylenedioxy dental

IT Dental materials and appliances  
 (bridges, methacryloxyethylenedioxy cyclotriphosphazene-containing polymers for, properties of)

IT Dental materials and appliances  
 (composites, methacryloxyethylenedioxy cyclotriphosphazene monomer-containing, properties of, for bridges and crowns)

IT Dental materials and appliances  
(crowns, methacryloxyethylenedioxycyclotriphosphazene-containing polymers  
for, properties of)

IT 80-62-6 109-16-0 3253-39-2, 2,2-Bis(4-methacryloxy)phenylpropane  
RL: BIOL (Biological study)  
(dental resin for crowns and bridges containing acrylic cyclotriphosphazene  
and, properties of)

IT 92832-53-6  
RL: BIOL (Biological study)  
(dental resin for crowns and bridges containing, properties of)

IT 36936-74-0P 92832-54-7P 108704-94-5P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(preparation and properties of, for dental bridges and crowns)

IT 7732-18-5, properties  
RL: PEP (Physical, engineering or chemical process); PROC (Process)  
(sorption of, by acrylic cyclotriphosphazene monomer-containing dental  
polymers)

L9 ANSWER 65 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1986:110237 CAPLUS  
DN 104:110237  
ED Entered STN: 05 Apr 1986  
TI Organophosphazenes. 19. Copolymerization of 2-( $\alpha$ -  
ethoxyvinyl)pentafluorocyclotriphosphazene with styrene and methyl  
methacrylate  
AU Allen, Christopher W.; Bright, Randall P.  
CS Dep. Chem., Univ. Vermont, Burlington, VT, 05405, USA  
SO Macromolecules (1986), 19(3), 571-4  
CODEN: MAMOBX; ISSN: 0024-9297  
DT Journal  
LA English  
CC 35-3 (Chemistry of Synthetic High Polymers)  
AB ( $\alpha$ -Ethoxyvinyl)pentafluorocyclotriphosphazene (I) [80297-67-2]  
underwent radical copolymn. with styrene [100-42-5] and Me methacrylate.  
The styrene system was examined in detail, with flame retardant copolymers  
[80297-68-3] having  $\leq 43.7\%$  I content being obtained. Reactivity  
ratios for the styrene-I copolymn. were calculated by several methods. An  
examination of the Alfrey-Price parameters for I indicated that the major  
perturbation of the olefinic center was through the  $\alpha$ -electron-  
withdrawing effect of I. The copolymer mol.wts. decreased with increasing  
I content. The thermal decomposition of the copolymers was a two-step process,  
with I being involved in the first step.

ST vinylfluorocyclotriphosphazene styrene copolymn; methacrylate  
vinylfluorocyclotriphosphazene copolymer; reactivity ratio  
vinylfluorocyclotriphosphazene polymn; thermal degrdn  
vinylfluorocyclotriphosphazene polymer; phosphazene vinyl polymer

IT Fire-resistant materials  
((ethoxyvinyl)pentafluorocyclotriphosphazene-styrene copolymer)

IT Phosphazene polymers  
RL: USES (Uses)  
(ethoxyvinylpentafluorocyclotriphosphazene-vinyl compound copolymers)

IT Q-e value in polymerization  
Reactivity ratio in polymerization  
(of (ethoxyvinyl)pentafluorocyclotriphosphazene with styrene)

IT Kinetics of polymerization  
(of (ethoxyvinyl)pentafluorocyclotriphosphazene with styrene,  
reactivity ratio in relation to)

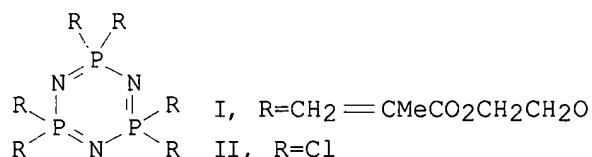
IT Polymer degradation  
(thermal, of (ethoxyvinyl)pentafluorocyclotriphosphazene-styrene  
copolymers, mechanism of)

IT 100-42-5, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(polymerization of, with (ethoxyvinyl)pentafluorocyclotriphosphazene,  
reactivity ratio and Q-e values in)

IT 80297-67-2

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (polymerization of, with styrene, reactivity ratio and Q-e values in)  
 IT 80297-68-3P  
 RL: PEP (Physical, engineering or chemical process); SPN (Synthetic  
 preparation); PREP (Preparation); PROC (Process)  
 (preparation and thermal degradation of)  
 IT 99798-90-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)

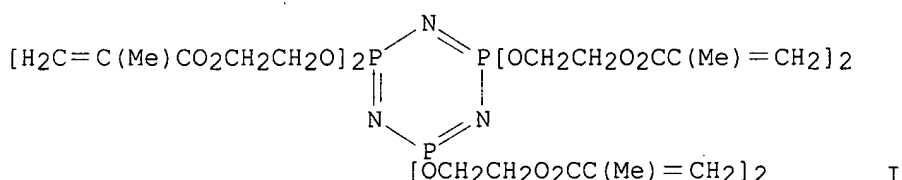
L9 ANSWER 66 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1985:191109 CAPLUS  
 Correction of: 1984:598144  
 DN 102:191109  
 Correction of: 101:198144  
 ED Entered STN: 02 Jun 1985  
 TI Synthesis of hexakis(methacryloyloxyethoxy)cyclotriphosphazene and its  
 properties and the use as a composite resin  
 AU Anzai, Misaki; Ohashi, Masayoshi  
 CS Sch. Dent., Nihon Univ., Tokyo, 101, Japan  
 SO Shika Zairyo, Kikai (1984), 3(3), 401-8  
 CODEN: SZKIDA; ISSN: 0286-5858  
 DT Journal  
 LA Japanese  
 CC 63-7 (Pharmaceuticals)  
 Section cross-reference(s): 29  
 GI



AB The title compound (I) [92832-53-6] was prepared as new dental resin  
 monomer. Phosphonitrile chloride (II) [1832-07-1] and 2-hydroxyethyl  
 methacrylate (HEMA) [868-77-9] were allowed to react at 40° to give  
 I. A mixture of approx. 21% (weight) of I, 8.5% triethyleneglycol  
 dimethacrylate and 70% Si<sub>3</sub>N<sub>4</sub> were polymerized, and the polymer had a  
 compressive strength, tensile strength and transverse strength of 473.6,  
 33.8 and 80.4 MPa, resp., and hardness HK 96, coefficient of thermal expansion  
 24.2 X 10<sup>6</sup>/° and its water sorption was 1.2 mg/cm<sup>2</sup> at 1 wk.  
 ST methacryloyloxyethoxy cyclotriphosphazene dental  
 IT Dental materials and fillings  
 (hexakis(methacryloyloxyethoxy)cyclotriphosphazene for)  
 IT 12033-89-5, biological studies  
 RL: BIOL (Biological study)  
 (dental composite resin containing acrylic cyclotriphosphazene-triethylene  
 glycol dimethacrylate copolymer and)  
 IT 92832-54-7P  
 RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological  
 study); PREP (Preparation); USES (Uses)  
 (preparation of, as dental material)  
 IT 92832-53-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, for dental resins)  
 IT 868-77-9  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with hexachlorotriphosphazene)  
 IT 1832-07-1  
 RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, with hydroxyethyl methacrylate)

L9 ANSWER 67 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1985:137742 CAPLUS  
DN 102:137742  
ED Entered STN: 20 Apr 1985  
TI Studies on the physical properties of dental resin. 2. Studies on  
composite resins with hexa(methacryloylethylenedioxy)cyclotriphosphazene  
used as a monomer. Fillers and physical properties  
AU Anzai, Misaki; Ohashi, Masayoshi  
CS Sch. Dent., Nihon Univ., Tokyo, Japan  
SO Journal of Nihon University School of Dentistry (1984), 26(3), 238-42  
CODEN: JNUDAT; ISSN: 0029-0432  
DT Journal  
LA English  
CC 63-7 (Pharmaceuticals).  
GI



AB Composite resins of hexa(methacryloylethylenedioxy)cyclotriphosphazene (I)  
[92832-53-6] containing 70% inorg. fillers (SiO<sub>2</sub>, Si<sub>3</sub>N<sub>4</sub>, Al<sub>2</sub>O<sub>3</sub>, and  
their binary mixts.) are suitable as dental fillings, especially for resoration  
of molars. These composites set in 1.5-2 min. Si<sub>3</sub>N<sub>4</sub> as the filler gave  
maximum compressive strength (473.6 MPa) and Knoop hardness (HK96) and min.  
coefficient of thermal expansion (24.2 + 10-6/1°). The tensile  
strength was maximum with SiO<sub>2</sub> (43.4 MPa), and the transverse strength was  
maximum (88.3 MPa) with SiO<sub>2</sub>-Al<sub>2</sub>O<sub>3</sub> (1:1). Water absorption was 1.2-1.4  
mg/cm<sup>2</sup> in 7 days for the composites.  
ST dental composite hexamethacryloylethylenedioxy cyclotriphosphazene;  
cyclophosphazene methacryloyl dental composite; silica filler dental  
composite; alumina filler dental composite; silicon nitride filler dental  
composite  
IT Dental materials and fillings  
(composites, hexa(methacryloylethylenedioxy)cyclotriphosphazene and  
inorg. fillers of, mech. properties and strength of)  
IT 1344-28-1, biological studies 7631-86-9, biological studies  
12033-89-5, biological studies  
RL: BIOL (Biological study)  
(dental composites containing hexa(methacryloylethylenedioxy)cyclotriphosph  
azene and, mech. and phys. properties of)  
IT 92832-53-6  
RL: BIOL (Biological study)  
(dental composites containing inorg. fillers and, mech. and phys.  
properties of)

L9 ANSWER 68 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1985:32326 CAPLUS  
DN 102:32326  
ED Entered STN: 26 Jan 1985  
TI Dental sealants containing phosphazenes  
PA Nihon University, Japan  
SO Belg., 12 pp.  
CODEN: BEXXAL  
DT Patent  
LA French  
ICI A61

CC 63-7 (Pharmaceuticals)  
Section cross-reference(s): 35

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	BE 899654	A1	19840831	BE 1984-212932	19840514
	JP 60038307	A2	19850227	JP 1983-147690	19830811
	JP 03050726	B4	19910802		
	US 4579880	A	19860401	US 1984-603648	19840424
	CA 1219403	A1	19870324	CA 1984-452920	19840426
	FR 2555440	A1	19850531	FR 1984-7420	19840514
	FR 2555440	B1	19880916		
	GB 2144754	A1	19850313	GB 1984-12441	19840516
	GB 2144754	B2	19861217		
	DE 3421060	A1	19850228	DE 1984-3421060	19840606
	DE 3421060	C2	19920820		
	NL 8401961	A	19850301	NL 1984-1961	19840620
PRAI	JP 1983-147690	A	19830811		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
BE 899654	ICI	A61
	IPCI	A61K; C07F
	IPCR	C08G0079-00 [I,C*]; C08G0079-02 [I,A]
JP 60038307	IPCI	A61K0006-08 [ICM,4]; A61K0006-02 [ICM,4,C*]; C08K0005-49 [ICS,4]; C08K0005-00 [ICS,4,C*]
US 4579880	IPCI	A61K0006-08 [ICM,4]; A61K0006-02 [ICM,4,C*]
	IPCR	C08G0079-00 [I,C*]; C08G0079-02 [I,A]
	NCL	523/116.000; 260/998.110; 433/228.100; 522/142.000; 522/162.000; 522/171.000; 523/117.000; 526/276.000; 528/399.000
CA 1219403	IPCI	A61K0006-08 [ICM,4]; A61K0006-02 [ICM,4,C*]
	IPCR	C08G0079-00 [I,C*]; C08G0079-02 [I,A]
FR 2555440	IPCI	A61K0006-08 [ICM,4]; A61K0006-02 [ICM,4,C*]; C08F0230-02 [ICS,4]; C08F0230-00 [ICS,4,C*]
	IPCR	C08G0079-00 [I,C*]; C08G0079-02 [I,A]
GB 2144754	IPCI	C08F0030-02 [ICM,4]; C08F0030-00 [ICM,4,C*]; A61K0006-08 [ICS,4]; A61K0006-02 [ICS,4,C*]; C07F0009-65 [ICA,4]
	IPCR	C08G0079-00 [I,C*]; C08G0079-02 [I,A]
DE 3421060	IPCI	C08G0079-02 [ICM,3]; C08G0079-00 [ICM,3,C*]; C08L0085-02 [ICS,3]; C08L0085-00 [ICS,3,C*]; C08K0003-00 [ICS,3]; C08K0005-14 [ICS,3]; C08K0005-17 [ICS,3]; C08K0005-00 [ICS,3,C*]; C08J0003-24 [ICS,3]; A61K0006-08 [ICS,3]; A61K0006-02 [ICS,3,C*]; C07F0009-65 [ICS,3]
	IPCR	C08G0079-00 [I,C*]; C08G0079-02 [I,A]
NL 8401961	IPCI	A61K0006-08 [ICM,4]; A61K0006-02 [ICM,4,C*]; C08L0043-02 [ICS,4]; C08L0043-00 [ICS,4,C*]; C08L0085-02 [ICS,4]; C08L0085-00 [ICS,4,C*]
	IPCR	C08G0079-00 [I,C*]; C08G0079-02 [I,A]

OS MARPAT 102:32326

AB Dental sealant compns. contain 10-99% polymers prepared from phosphazenes containing acrylic groups and alkylene glycol dimethacrylates and silica fillers. Thus, 1,1,3,3,5,5-hexakis(methacryloyloxyethoxy)cyclotriphosphazene (I) [92832-53-6] was prepared by the reaction of hydroxyethyl methacrylate [868-77-9] with hexachlorocyclotriphosphazene [940-71-6] in anhydrous benzene followed by the addition of pyridine. This compound was polymerized in the presence of Bz2O2 for 6 h at 60° and for a further 2 h at 120°. The properties of the resulting polyphosphazene [93891-06-6] are tabulated. A polymer for dental sealants was prepared from 70 parts I, 30 parts triethylene glycol dimethacrylate and 0.3 parts Bz2O2 and the properties of the polymer determined. The properties of the phosphazene polymer such as resistance to compression stability, coefficient of thermal



dilation, etc., were better than those of the polymers not containing phosphazene groups.

ST cyclotriphosphazene acrylic dental sealant  
 IT Phosphazene polymers  
 RL: BIOL (Biological study)  
 (cyclo-, methacrylic, dental sealants containing)

IT Dental materials and fillings  
 (sealants, methacryloylcyclotriphosphazenes)

IT 7631-86-9, biological studies  
 RL: BIOL (Biological study)  
 (dental sealant compns. containing methacryloylcyclotriphosphazenes and)

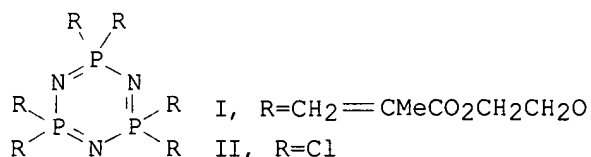
IT 92832-53-6P  
 RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and polymerization of, for dental sealant compns.)

IT 92832-54-7P 93891-06-6P  
 RL: PREP (Preparation)  
 (preparation of, for dental sealant compns.)

IT 868-77-9  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with hexachlorocyclotriphosphazene)

IT 940-71-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with hydroxyethyl methacrylate)

L9 ANSWER 69 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1984:598144 CAPLUS  
 DN 101:198144  
 ED Entered STN: 25 Nov 1984  
 TI Synthesis of hexakis(methacryloyloxyethoxy)cyclotriphosphazene and its properties and the use as a composite resin  
 AU Anzai, Misaki; Ohashi, Masayoshi  
 CS Sch. Dent., Nihon Univ., Tokyo, 101, Japan  
 SO Shika Zairyo, Kikai (1984), 59(5), 401-8  
 CODEN: SZKIDA; ISSN: 0286-5858  
 DT Journal  
 LA Japanese  
 CC 63-7 (Pharmaceuticals)  
 Section cross-reference(s): 29  
 GI



AB The title compound (I) [92832-53-6] was prepared as new dental resin monomer. Phosphonitrile chloride (II) [1832-07-1] and 2-hydroxyethyl methacrylate (HEMA) [868-77-9] were allowed to react at 40° to give I. A mixture of approx. 21% (weight) of I, 8.5% triethyleneglycol dimethacrylate and 70% Si<sub>3</sub>N<sub>4</sub> were polymerized, and the polymer had a compressive strength, tensile strength and transverse strength of 473.6, 33.8 and 80.4 MPa, resp., and hardness HK 96, coefficient of thermal expansion 24.2 + 106/° and its water sorption was 1.2 mg/cm<sup>2</sup> at 1 wk.

ST methacryloyloxyethoxy cyclotriphosphazene dental  
 IT Dental materials and fillings  
 (hexakis(methacryloyloxyethoxy)cyclotriphosphazene for)

IT 12033-89-5, biological studies  
 RL: BIOL (Biological study)  
 (dental composite resin containing acrylic cyclotriphosphazene-triethylene

glycol dimethacrylate copolymer and)  
 IT 92832-54-7P  
 RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (preparation of, as dental material)  
 IT 92832-53-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, for dental resins)  
 IT 868-77-9  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with hexachlorocyclotriphosphazene)  
 IT 1832-07-1  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with hydroxyethyl methacrylate)

L9 ANSWER 70 OF 70 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1973:137383 CAPLUS  
 DN 78:137383  
 ED Entered STN: 12 May 1984  
 TI Treating polymeric substrates with high-energy radiation  
 IN Hook, Edwin O.; Nichols, Larry D.  
 PA Moleculon Research Corp.  
 SO U.S., 8 pp.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 IC B01J; C07C  
 INCL 204159120  
 CC 36-6 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 28, 43

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3711389	A	19730116	US 1969-841981	19690715
PRAI	US 1969-841981	A	19690715		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 3711389	IC	B01J; C07C
	INCL	204159120
	IPCI	B01J0001-10; B01J0001-12; C07C0125-00
	NCL	522/089.000; 427/513.000; 522/115.000; 522/136.000; 522/137.000; 522/138.000; 522/155.000; 522/157.000; 522/160.000; 522/161.000; 522/162.000; 522/164.000; 522/165.000; 525/287.000; 525/404.000; 525/445.000; 558/080.000; 564/013.000

AB Flame, solvent, heat, and deformation resistant plastic, textile, and wood products were obtained by treating the substrates with unsatd. cyclotri- or cyclotetraphosphazene stabilizers, e.g. tetrakis(dimethylamino)cyclotriphosphazene derivative, and 1-10 Mrad ionizing radiation. Thus, a mixture of hexakis(allylamino)cyclotriphosphazene [986-11-8] 4, hexakis(methallyloxy)cyclotriphosphazene [39033-43-7] 2, and nylon 12 [25038-74-8] 100 parts was extruded into a 1/16 in. rod, and irradiated in N to 5 Mrads with a 60Co source. The stabilized sample had a higher elastic modulus than phosphazene-free nylon, and self-extinguished in horizontal and 45.deg.(from horizontal) flame tests after consuming less than 1/2 in. of 3-in. samples, while phosphazene-free samples burned completely into an angular flame test. Cellophane samples were similarly stabilized using bis(allyloxy)tetrakis(dimethylamino)cyclotriphosphazene [39050-76-5] prepared from phosphonitrilic chloride, Me2NH, and Na allylate through tetrakis(dimethylamino)dichlorocyclotriphosphazene.

ST cyclotriphosphazene fire retardant plastic; cyclotetraphosphazene fire retardant plastic; radiation crosslinks stabilized plastic; nylon 12 fire resistance; cellophane fire resistance; birch fire resistance; wood fire resistance; paper fire resistance; cotton textile fire resistance;

polypropylene fire resistance; PVC radiation crosslinking; phosphazene cyclic fire resistance

IT Fireproofing  
(agents for, cyclotri- and cyclotetraphosphazene unsatd. derivs. as)

IT Gamma ray, chemical and physical effects  
(cyclotri- and cyclotetraphosphazene unsatd. derivative- impregnated product treatment with, for fireproofing)

IT Wood  
(fireproofing of birch by treatment with cyclotri- or cyclotriphosphazene unsatd. derivs. and  $\gamma$ -irradiation)

IT Textiles  
(fireproofing of cotton, by treatment with cyclotri- or cyclotetraphosphazene unsatd. derivs. and  $\gamma$ - irradiation)

IT Polyamides, uses and miscellaneous  
RL: USES (Uses)  
(fireproofing of, by treatment with cyclotri- or cyclotetraphosphazene unsatd. derivs. and  $\gamma$ -irradiation)

IT Cellophane  
(fireproofing of, by treatment with cyclotri- or cyclotetraphosphazene unsatd. derivs. and  $\gamma$ - irradiation)

IT 986-11-8 39033-43-7 39050-76-5 41407-14-1 41407-15-2  
41407-17-4  
RL: USES (Uses)  
(fireproofing agents)

IT 24937-16-4 25038-74-8  
RL: PROC (Process)  
(fireproofing of, by treatment with cyclotri- or cyclotetraphosphazene unsatd. derivs. and  $\gamma$ -irradiation)

IT 24937-16-4  
RL: PROC (Process)  
(fireproofing of, by treatment with cyclotri- or cyclotetraphosphazene unsatd. derivs. and  $\gamma$ -irradiation)

IT 25323-29-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and reactions of)

IT 41407-16-3  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with acryloyl chloride)

IT 107-11-9 20907-32-8 41159-49-3  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with dichlorotetrakis(dimethylamino)cyclotriphosphazene)

IT 1832-07-1  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with dimethylamine)

IT 814-68-6  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with tetrakis(dimethylamino)bis[(2-hydroxyethyl)amino]cyclotriphosphazene)

IT 141-43-5, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(with dichlorotetrakis(dimethylamino)cyclotriphosphazene)

IT 124-40-3, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(with phosphonitrilic chloride)

=> D HIS

(FILE 'HOME' ENTERED AT 08:07:37 ON 04 SEP 2006)

FILE 'REGISTRY' ENTERED AT 08:07:48 ON 04 SEP 2006

L1 492 S PHOSPHAZENE  
L2 31 S L1 AND ACRYL?  
L3 6 S L2 AND ENE

L4 31 S L2 OR L3  
L5 1216 S BIURET  
L6 1216 S BIURET?  
L7 0 S L6 AND (ACRYL ENE ALLYL)

L8 FILE 'REGISTRY' ENTERED AT 08:10:01 ON 04 SEP 2006  
31 S L4

L9 FILE 'CAPLUS' ENTERED AT 08:10:13 ON 04 SEP 2006  
70 S L8

=> LOG Y

COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION
215.36	346.07

FULL ESTIMATED COST

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE	TOTAL
ENTRY	SESSION
-52.50	-56.76

CA SUBSCRIBER PRICE

STN INTERNATIONAL LOGOFF AT 08:10:41 ON 04 SEP 2006

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	34	triazatriphosphorine	US-PGPUB; USPAT	OR	OFF	2006/09/04 08:17
L2	40	\$triazatriphosphorine\$	US-PGPUB; USPAT	OR	OFF	2006/09/04 08:18
L3	58	\$triazatriphosphorine\$	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/09/04 08:18
L4	10200	\$PHOSPHAZEN\$	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/09/04 08:20
L5	3070	\$PHOSPHAZEN\$ AND (photoa\$ photob\$ photoc\$ photod\$ photoe\$ photof\$ photog\$ photoh\$ photoi\$ photoj\$ photok\$ photol\$ photom\$ photon\$ photoo\$ photop\$ photoq\$ photor\$ photos\$ photot\$ photou\$ photov\$ photow\$ photoX\$ photoY\$ photoZ\$)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/09/04 08:21
L6	238	\$PHOSPHAZEN\$ AND (photoa\$ photob\$ photoc\$ photod\$ photoe\$ photof\$ photog\$ photoh\$ photoi\$ photoj\$ photok\$ photol\$ photom\$ photon\$ photoo\$ photop\$ photoq\$ photor\$ photos\$ photot\$ photou\$ photov\$ photow\$ photoX\$ photoY\$ photoZ\$) AND ("430"/\$ "522"/\$).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/09/04 08:22
L7	11	\$PHOSPHAZEN\$ AND (photoa\$ photob\$ photoc\$ photod\$ photoe\$ photof\$ photog\$ photoh\$ photoi\$ photoj\$ photok\$ photol\$ photom\$ photon\$ photoo\$ photop\$ photoq\$ photor\$ photos\$ photot\$ photou\$ photov\$ photow\$ photoX\$ photoY\$ photoZ\$) AND ("430"/\$ "522"/\$).CCLS. AND BIURET\$	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/09/04 10:30
L8	210	6 NOT 7	US-PGPUB; USPAT	OR	OFF	2006/09/04 08:26
L9	2	((("4634602") or ("4424252"))).PN.	US-PGPUB; USPAT	OR	OFF	2006/09/04 09:10
L10	2	("20030171449").PN.	US-PGPUB; USPAT; DERWENT	OR	OFF	2006/09/04 09:10
L11	1	2002-549189.NRAN.	DERWENT	OR	OFF	2006/09/04 09:14
L12	0	EP-19860041-\$.DID.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/09/04 09:14